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*DIESEL RAILWAY TRACTION SUPPLEMENT*

*The November issue of* THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price* 1s.

*TO CALLERS AND TELEPHONERS*

*Until further notice our office hours are: Mondays to Fridays* 9.30 *a.m. till* 5.30 *p.m.*
*The office is closed on Saturdays*

*ANSWERS TO ENQUIRIES*

*By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter*

*ERRORS, PAPER, AND PRINTING*

*Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards*

## Census of Production Enquiry

THE report of the Census of Production Committee, which has been prepared under the Chairmanship of Sir George Nelson, if adopted by the Government would require industrial organisations to supply a wide range of information. The Committee states that firms should be compelled to give particulars of wages, salaries, depreciations, rent, rates and taxes, and other principal items of costs. So that the Government might assess the activities of workers in industry, statistics should be disclosed showing the man-hours worked, but the Committee considers that compulsory powers for collection on this point should be applied only after consultation with each industry, and after agreement that such statistics would be useful and significant. A number of other details will also be required from industrial undertakings, and far-reaching powers are proposed for ascertaining not only all relevant details of the constitution of industrial costs, but also for analysing the control of industrial businesses. A good deal of the additional information sought undoubtedly is required to make good the deficiencies of the census in the old form, but sight should not be lost of the burden which will be placed on industry in supplying these statistics. The Committee has recognised this, and it does not contemplate that information on all the additional subjects will be asked for every year. Nevertheless, many will fear that if legislative effect is given to the Committee's report, a further impetus will be given to the collection of statistics for their own sake.

* * * *

## Sir Sam Fay's Retirement as a Railway Director

The retirement of Sir Sam Fay has now been announced from the boards of the Buenos Ayres Great Southern Railway Co. Ltd. and the Buenos Ayres Western Railway Limited. These were the last two railway companies of which Sir Sam Fay, who attained his 88th birthday on December 30, 1944, has continued to be a director. His railway career has extended since 1872, when he joined the London & South Western Railway. From 1902 he was General Manager for 20 years of the Great Central Railway, and during his long association with railways both in this country and abroad, he built up an extremely wide experience on both the administrative and operating sides. His retirement from the boards of the two Argentine railway companies will sever a link with railway administration which goes back for some 70 years. Sir Sam Fay has enjoyed a long and full business career. His final step into retirement will be marked by the good wishes of many railwaymen.

* * * *

## Lack of a Railway Wage Policy

The *Railway Review* in its October 12 issue dealt at some length with the correspondence which appeared in *The Railway Gazette* recently on railway wages, and also the article entitled "The Implication of the Railway Wages Settlement," which was published in our August 31 issue. The article in the *Railway Review*, as did Mr. Savage in his letter published in our October 5 issue, dwells on the minimum wage. What it does not explain is why every time the question of the bottom grades is raised, in the end the top grades get most out of the settlement. In the August settlement the labourer gets 7s. a week more, and the engine driver 11s. Really, what is wanted is a wages policy, as *The Times*, and even the Chancellor of the Exchequer, begin to see. These opportunist settlements with miners, agricultural workers, dockers, and railwaymen never satisfy the men and yet upset the balance of things in other directions. The Government receives no credit for the millions it is spending in keeping the cost of living down so as to avoid inflation. Perhaps it does not deserve to, as it proceeds to undermine its own policy by conceding wages advances which encourage the people to spend, and also tend to raise prices.

* * * *

## Railway Traffics and Charges

A number of references have been made in our columns to the necessity which will arise of adjusting railway charges to the new level of costs which has grown up during the war. An article in the City columns of *The Times* recently drew attention to the fact that the net revenue for the railway pool for the current year is likely to be about £76,000,000, or some £14,000,000 below that for 1944 and £30,000,000 below that for 1943. The future level of freight traffic will depend on how quickly civilian industry gets into its stride, and passenger travel and passenger rail travel is largely bound up with the future of petrol rationing. If a drop in railway passenger traffic coincided with a lower level of freights, it would produce a very different pool account to that to which railway stockholders and users have been accustomed during the war. It is also suggested that a recent Government reference to transport charges has escaped general notice. This reference, by Mr. Herbert Morrison, which was reported in our October 19 issue, was the rejection of a suggestions that a Select Committee might be appointed

to consider introducing equalised rates of freight charges for railway transport as a means of encouraging the economic rehabilitation of the countryside and the redistribution of industry. Mr. Morrison said that the Minister of War Transport was examining the principles on which transport charges should be based, but he did not think a Select Committee would be an appropriate method of dealing with the matter.

* * * *

## Northern Ireland Train Service Restoration

A rapid train service recovery from wartime conditions is being made in Northern Ireland. On the lines of the Northern Counties Committee the radical improvements effected in the earlier part of the year are more than being maintained during the winter. The best pre-war schedule of 2¼ hr. over the 92¾ miles between Belfast and Londonderry is now observed by morning and evening expresses in each direction, and the average time of ten trains on this service is only 2½ hr. The crack 1939 timing of 75 min. between Belfast and Portrush is not in sight again yet, though ten trains on this service are now making the journey in 1¾ to 2 hr. Refreshment service steadily increases and it is very creditable that on this small system ten trains in all on the Londonderry service and four on the service to and from Portrush are provided daily with restaurant or refreshment cars. The same applies to the Great Northern Railway of Ireland, which now has ten daily expresses between Dublin and Belfast, and ten between Belfast and Londonderry, with dining or light refreshment cars attached. Despite the two lengthy customs stops at the frontier stations of Goraghwood and Dundalk, the five well-spaced express trains between Belfast and Dublin have come down to an average overall time of 3 hr. 6 min., and as 31 min. of this is scheduled time spent at stations, the average running time for the 112½ miles is 2 hr. 35 min. Several 30 min. runs are now made in each direction over the 25 miles between Belfast and Portadown, thus restoring the first 50 m.p.h. start-to-stop runs to the Irish timetables.

* * * *

## Mr. Morrison on Private Enterprise

It is widely reported that when Mr. Herbert Morrison arrived late to speak at a Labour demonstration in Birmingham Town Hall on October 28, he said that too much should not be expected from private enterprise, and that he would refrain from speaking about his train being late. He added :—" When the Labour Government has nationalised the transport undertakings of the country, then will be your time to grumble because then you will have some rights." Mr. Morrison has always been optimistic about the benefits to be derived from the nationalisation of transport. Those who bear in mind such instances of nationalisation as the Post Office, will not share his sanguine outlook. There are places within four miles of Charing Cross which recently often have not received their morning post until after 9.30, and from Westminster to Pinner appears to be a two days' journey for a letter. Perhaps Mr. Morrison hopes nationalisation would provide an opportunity for some of the ambitious building schemes he mentioned when he opened the *Star* plan for the South Embankment on October 22. He said he would like all the main-line railways within two miles of the centre of the City to run underground into a central terminus. Enormously costly projects of this kind, at the present juncture, seem to suggest that Mr. Morrison is not only out of touch with reality, but with some of his Cabinet colleagues, who, more realistically, are concerned with the possibility of the Nation paying its way.

* * * *

## "It Can Now Be Revealed"

Much of the war work of the British railways had to be secret until after the conclusion of hostilities. Without full knowledge the public could hardly be expected to appreciate how detrimental to the well-being of the railways was the secrecy under which it was necessary to work. For nearly six years the railways were unable to take the public fully into their confidence and explain with peacetime frankness their problems as they arose and the ways in which they were being tackled. To overcome some of the disadvantages inherent in this policy a 64-page booklet* has been issued on behalf of the four main-line railways and London Transport. It is fully illustrated and describes not only the great variety of armaments made in railway workshops, but for the first time gives the full story of the part the railways played behind the bomber offensive; how new aerodromes came into being and how they were serviced. Over a period of four months in 1943 nine trains a day left London laden with rubble from bombed buildings to make foundations for airfields in eastern England. Each 1,000 bomber raid on the enemy necessitated the running of 28 trains of petrol and eight trains of bombs. The booklet also explains some of the problems which now face the railway, and the post-war plans which are intended to give the public the best possible transport services as soon as conditions permit.

* "It Can Now Be Revealed," issued by the British Railways Press Office, 2, Palace Chambers, Bridge Street, Westminster, S.W.1. Obtainable from railway bookstalls. Price 1s.

* * * *

## Wagon Builders and the War Effort

The fine contribution made by British wagon-builders to the success of our arms was well brought out in the address by Lt.-Colonel Arthur N. Forman, Chairman & Managing Director of Hurst Nelson & Co. Ltd., at the recent ordinary general meeting of that company. A summary of some of the principal points in his speech is given on another page in this issue. The ready adaptability of the management in meeting emergencies was shown early in the war when work on wagons destined for France was switched as quickly as possible to other urgent requirements, on a programme which included wagons for service in this country and in Eastern theatres of war. Large quantities of wagons for other purposes were also supplied, many of which were required by our own railways. A considerable portion of the works capacity of the company also had to be devoted to the repair of merchandise wagons. The demand for this service, due to the increased intensity of traffic, had expanded far beyond the repairing facilities existing in this country at the outbreak of war. A great variety of other materials for war purposes, for which facilities were suitable, was also produced. Colonel Forman rightly claimed that the success of the policy pursued by the company, both before and during the war, was a symbol at least of the benefits which private enterprise offers to the nation.

* * * *

## West Wales Cattle Traffic

There has been some criticism that West Wales cattle dealers have had to go short of cattle wagons because of alleged preference given to imported cattle from Ireland. The demand on all the railway companies for cattle wagons during recent weeks has been unprecedented and any priority which has been given has been on behalf of the Ministry of Food and for livestock for slaughter, as this traffic constitutes the current meat ration. In the week ended October 5, nearly 1,000 additional cattle wagons were loaded by the railway companies over the corresponding week last year and in the previous week the figure was nearly 2,500. Coupled with this phenomenal demand is the fact that 1,539 wagons, representing 11·7 per cent. of the total book stock of the companies, are out of use, awaiting repairs which cannot be carried out because of shortage of labour. It appears that in spite of these facts West Wales has not suffered a shortage of cattle wagons to the same extent as have other parts of the country. To ease the situation, however, by arrangement with the Central Rolling Stock Control, the number of empty cattle wagons passed from the L.N.E.R. to the G.W.R. is to be doubled, and arrangements have also been made for an additional three trains of empty wagons to be worked from the L.M.S.R. to the G.W.R. The Ministry of Agriculture has also agreed to lift its ban on the use of high-side open wagons for the conveyance of sheep for distances up to 100 miles, and transits not exceeding 12 hours, until the end of November.

* * * *

## L.M.S.R. Mechanised Goods Shed

Elsewhere in this issue we give an account of the official opening of the L.M.S.R. mechanised goods shed at Lawley Street, Birmingham. The shed has been designed, built and equipped on principles hitherto not incorporated in goods station working and the whole scheme is the first fruit of the accumulated research and study of goods terminal operation by a committee of L.M.S.R. goods operators which was set up in 1935 to investigate methods of handling miscellaneous traffic and the best type of lay-out for that purpose. The shed covers an area of 5½ acres, and is built with large span roof, reducing obstructive columns to a minimum. The depot is designed to deal with 11 million miscellaneous packages a year, and the equipment contains many novel appliances operated entirely by electricity. Goods are loaded direct from road vans into wagons, and incoming consignments are unloaded direct on to conveyors leading to the sorting sections. There is a complete absence of derrick cranes and other formerly accepted goods shed impedimenta, and the smoothness and comparative quiet with which the work proceeds inside the building is impressive; the speeding up of operations due to mechanisation, it is stated, has resulted also in the daily work of the shed being accomplished in three hours less than previously. These new methods of dealing with goods traffic, we understand, are to be introduced at other points on the L.M.S.R., and their adoption will no doubt create considerable interest among railway goods traffic operators.

## Paget's Heroic Experiment

TO Sir Cecil Paget belongs the credit of having produced one of the most outstanding experimental locomotives ever made; to some of the contemporary heads of the Midland Railway equally belongs the notoriety of having discouraged and obstructed a most courageous venture, which, if it had been allowed by them to succeed might have resulted in some far-reaching benefits to steam traction on railways. There is nothing to be gained by attempting to water down these inescapable facts, for they are fundamental and govern the course of the whole heartbreaking history of this amazing engine.

Few people indeed ever succeeded in learning more than the bare fact of the locomotive's existence; inpenetrable secrecy surrounded it throughout its eight brief years from the drawing board to the scrap heap. A few favoured persons, it is true, were allowed to know that it stood, jealously protected from close scrutiny, in the paint shop at Derby, but little was known about it until Ahrons in 1924-25 published a short description of its principal features in his great work, "The British Steam Locomotive." Quite recently, some further points were made known in an exceedingly valuable critical article by Mr. Kenneth H. Leech, in the April, 1945, *Journal of the Stephenson Locomotive Society*.

But it is to Mr. James Clayton, M.B.E., M.I.Mech.E., who retired not long ago from the position of Personal Assistant to the Chief Mechanical Engineer, Southern Railway, that locomotive historians will feel grateful in the years to come, for his accurate, painstaking, and authoritative article on the subject. Mr. Clayton was at Derby when Paget was planning his great project and worked with him in the design and construction of his engine.*

It is from Mr. Clayton that we learn that Paget got his inspiration from the phenomenal success attending the Willans sleeve-valve engine, in contemporary stationary engine practice. By the turn of the century, electric power houses were springing up all over the country, and the Willans engine was at its zenith. Paget strove to apply the principles of this prime mover, then unsurpassed, to rail traction. As Mr. Clayton justly remarks at the conclusion of his article, Paget was no slavish copyist; and although the sleeve-valve engine was the principal novelty, the opportunity was taken to introduce at the same time several other features virtually unknown in locomotive practice. Of these, the boiler was the most extraordinary; the firebox was simply a brick-lined furnace with two firedoors at one end and a steel tube plate at the other; only the steel crown ranked as evaporative surface, for there were no water legs. By this clever stroke, Paget had made it possible to dispense with about three-quarters of the firebox stays, and moreover, had produced a firebox from which copper was entirely absent.

In many of the smaller details—location of injectors, water gauges, etc.; provision of a good look-out; and in design of ash-dumping devices in ashpan and smokebox—Paget showed himself to be well in advance of his time, and well able to appreciate the needs of those on the footplate.

After some rather inconclusive trials, the Paget engine was taken over by the Midland officials and it then gradually became impossible for Paget to have a free hand in the conduct of its subsequent tests. Mr. Kenneth Leech, who is perhaps the only man living to whom Paget unburdened himself on the subject, which (as Mr. Leech records) "was a very sore point with him," gives the interesting information that No. 2299 was built at Derby to Paget's private order, and that he spent all his available money on it, only to find that he required another £1,000-£2,000 to complete it. At that point the Midland Railway Company intervened; it finished the engine, but insisted on taking control of the tests and limiting the amount of experimental work that might prove necessary.

The final history of this grand experiment, conceived so brilliantly and initiated on so heroic a scale, makes sad reading. Test runs were marred by unlucky incidents, chiefly connected with valve leakage and the overheating of the cylinders, which must undoubtedly have created a good deal of prejudice against No. 2299; and eventually trial trips were abandoned. The engine thereafter was hidden away in the paint shop, and Paget, having been transferred to the Traffic Department, later became General Superintendent. Finally, during 1915, when Paget was away in France, commanding the Railway Operating Division, Royal Engineers, advantage was taken of this opportunity to break the engine up. No opportunity of rebuilding or re-designing it therefore could arise.

The inevitable question that confronts one, after reading Mr. Clayton's most valuable article, is "Could this engine, with certain modifications, have been made to justify the high hopes placed in her by her designer?" The evidence, scanty though it is, seems distinctly to point to an affirmative answer. The prime trouble undoubtedly lay in the rotary valves; perhaps by choice of other materials, in which the troubles arising through differing co-efficients of expansion could not occur, a workable valve might have been achieved. All things considered, it is astonishing how near the engine came to success; even the curious boiler seems to have done quite well, and that alone is a tribute to Paget's genius. Nor was there anything organically wrong with the conception of using trunk pistons. The nearest approach ever made, perhaps, to the Paget engine (though with an orthodox boiler) is to be seen in the Sentinel geared locomotives which we believe are still running on the Egyptian State Railways. If a history of the latter engines could be written, and studied in parallel with Mr. Clayton's account of the Paget engine, valuable comparisons might be possible.

There is one other point about Paget's idea which is of special interest, as indicating how far he was in advance of his times. His locomotive was to be a "general-purpose" machine, capable of hauling a heavy goods train at slow speed on one run and a high-speed express passenger train on the next. In this he showed that he had anticipated the new tendency for such locomotives, which are just beginning to find such favour in the U.S.A. Suppose instead of Fowler, Paget had succeeded Deeley in 1909! The course which the subsequent locomotive history of the Midland Railway might have taken staggers the imagination. Certain it is that, if the initial troubles had been allowed to be surmounted, a brilliant chapter would have been added to it.

In conclusion, we should like it to be known that it was the late Mr. C. E. Fairburn, M.A., Chief Mechanical & Electrical Engineer, L.M.S.R., who was kind enough to allow the tradition of reticence regarding No. 2299 to be broken, and supplied us with the drawings used by Mr. Clayton to illustrate his article.

* It was in the autumn of 1904 that Clayton began to work privately for Cecil Paget on the design for his locomotive and the preparation of detailed drawings. He had as his assistant Herbert Chambers. They worked in a small private office just outside Derby Station. Every evening Paget called and discussed his plans. On the completion of the first designs Paget offered Clayton a post on the Midland Railway under R. M. Deeley, who appointed him in charge of the Locomotive Casualty Department . Soon afterwards he was made Assistant to the Chief Locomotive Draughtsman, J. E. Anderson.

In due course it was decided to proceed with the design and construction of the Paget locomotive and again Clayton was in close contact with every feature of its design. About this time Paget was transferred to the Traffic Department where, as was his wont, he threw himself whole-heartedly to the task. Preparation of the drawings then proceeded apace and Paget kept in close contact with every point in the design. It was at this juncture that he altered the wheel arrangement from his original one of 4-6-2 to that of 2-6-2, and also conceived the unique design of firebox having its walls of firebrick.

* * * *

## Higher Education for the Mechanical Engineering Profession

WHEN the members of the Institution of Mechanical Engineers heard their President, Professor Andrew Robertson, deliver his Presidental Address on October 19, they knew that they would hear the opinions of an engineer who for many years has been an outstanding figure in technical education in Great Britain, and who, by virtue of his dual office of Professor of Mechanical Engineering at the University of Bristol and Principal of the Merchant Venturers' Technical College, is in a unique position to assess the proper spheres of influence of the university and the technical college in catering for the needs of the mechanical engineering profession. What some of them may not have foreseen was the masterly objectivity of the address, and the skill with which the President assembled, like the characters in a drama, the many influences affecting the engineer's training and their intricate inter-relationships. Here was no pedant's survey from within the walls of a classroom or lecture theatre, but a notable effort to present a really comprehensive picture of technical education today in its relation to the industrial needs of the country. It is therefore no idle phrase when he says "We are so intimately concerned with the crafts which are utilised in the construction of our products that in any discussion of educational activity we must take the whole field of engineering into our purview." This, indeed, is one of the many skilful feats which are accomplished in this address.

Three main groups form the raw material for the teacher of engineering, and these Professor Robertson has classified broadly as the Professional Engineer, the Assistant Engineer, and the Craftsman. Professor Robertson does not see any likelihood of a body being set up in this country to control engineering in the way that the General Medical Council controls medicine. Professional status will for some time to come, he thinks, depend largely

on membership of a major institution, and the recognition accorded will depend on the status of that institution. For membership of the Institution of Mechanical Engineers certain conditions relating to education, experience, and ability to perform responsible functions must be fulfilled. As to the educational requirements, two different qualifications—a degree or a Higher National Certificate with endorsement—will satisfy the Council.

It cannot be denied that these two qualifications are by no means equal in their demands on the student, for even on a basis of hours of instruction, a candidate for a degree must devote twice or thrice the time required of the aspirant to a Higher National Certificate. Both these types of men, however, undoubtedly are needed in engineering, though in different numbers. The difference in the available time for the training of each is an argument for the continuance of separate types of educational institutions—the university and the technical college, in fact. In the President's opinion the range of the latter "should be the crafts at one end and the Higher National Certificate and specialised technological work at the other," and "the aim of a university department should be to produce potential leaders of the profession."

A fact which is not as widely known and recognised as it should be is contained in this address, namely, that the first Chair of Engineering in the world was founded in Great Britain, when in 1840 Queen Victoria instituted the Regius Chair at Glasgow. Nevertheless, we in this country, says Professor Robertson, "have not been conspicuous in our appreciation of the part that universities can play in furthering the interests of our profession."

There is no *ad hoc* scheme for the development of character, that imponderable quantity which plays so decisive a part in the achievements of mankind. This is an exclusively individual attribute which emerges after the formative years of childhood are past, so that all we can do, whether in the workshop or in the college, is to ensure the best-known environment for the development of moral qualities. We can, however, say that trained intelligence, above all other personal attributes, is necessary in anyone who may some day become a high executive officer.

Closer collaboration between industry and the university, however, may solve many of the present-day difficulties, for graduates are the raw material of industry, and these are the men who should be able to apply the fundamental science which constitutes so important a part of the university course. Again, closer collaboration between industry and technical colleges will benefit the "assistant engineer" group.

In the technical college the subjects may range from those intended more particularly for craftsmen, to specialised techniques associated with design, manufacture, and administration. Many of these are covered by City & Guilds intermediate or full technological examinations; and still further courses may form valuable means of instruction in industrial technique for those who have obtained Higher National Certificates.

What will be the future position of the really skilled craftsman? If, as seems likely, the proportion of such men will tend to decrease, the need for the comprehensive training of the remaining few will become all the more pressing. In a large works adequate instruction courses can be given on the premises, but in smaller firms this may be very difficult. Yet the smaller the total number of skilled craftsmen, the greater their value to the industrial life of the country, and the more imperative it is to ensure that their craftsmanship shall not die out. We dare not risk the possibility of the state of affairs envisaged by H. G. Wells in the film "Things to Come," in which we saw motorcars harnessed to horses and used as carriages because there was nobody left with any knowledge of how to make the engine go.

Thus for craftsmanship, too, close collaboration between industry and the technical colleges is needed. If, in consequence, suitable schemes are properly worked out, all apprentices will have a chance of receiving suitable training, either in works, or in schools conducted by the industry or the technical college, or jointly by both. The most important thing is that, in the initial stages, representatives of industry shall state their needs to the educational authorities. The technical colleges can then proceed with the drafting of suitable courses, so that even the smallest firms are enabled to have their staff fully trained.

Professor Robertson had much sound advice to give; and every point in his address was well made. Yet one thing, though evident at its delivery, is absent from the printed version, and eludes capture in any resumé—the impress of a very charming personality. This absence was probably difficult to avoid, for Professor Robertson, one of the most modest of men, certainly would have shunned any personal striving after effect; hence, no doubt, his comparatively objective survey of the field in which he has achieved eminence. Yet his friendly and natural manner is indeed something to be remembered, for it added much to the pleasure of listening to a notable address.

* * * *

## Dunkirk and the G.W.R.

THE work of the main-line railway companies after the evacuation of the British Expeditionary Force from Dunkirk has been appreciated as a great feat of transportation, involving the re-distribution of scores of thousands of men of the Allied armies. The work of the railway steamships is worthy also of full recognition. These vessels were called on to steam into the battle zone and embark wounded, refugees, and British and Allied troops in conditions of the greatest hazard.

The story of the steamships of the G.W.R. during that critical time has been published in an attractively produced booklet.* In a foreword, Sir James Milne, K.C.V.O., C.S.I., General Manager, Great Western Railway, expresses the hope that the booklet will be valued as an example of the daring and resource displayed by all who participated in the great adventure with which it deals. An earlier book,† on the work of the G.W.R. in wartime, was the subject of an article in our issue of January 5, 1945, but specific mention of ships was necessarily meagre. The new book, however, unfettered by security restrictions, records in full the evacuation history of the Great Western Railway steamers and provides a plain and authentic account of their gallant part in the work of rescue.

The story opens with the sailing for Boulogne, on May 20, 1940, of the G.W.R. steamer *St. Andrew*, as a hospital ship. At 10 p.m. of that day, as the ship lay in the harbour, bombs began to rain on the town of Boulogne, its quays, and shipping. Next morning, the *St. Andrew* embarked the wounded from the base hospitals and took them to Southampton, leaving again shortly afterwards on a similar mission to Cherbourg. That was the beginning, and the booklet carries the story to Calais and to Dunkirk with accounts of more rescue work despite incessant bombing and shell fire, to say nothing of the risk of mines and shallow water.

The work of the G.W.R. steamer *St. Helier* is given in detail. The *St. Helier* made one trip to Calais, and seven successful trips into Dunkirk, bringing back some 1,500 evacuees and 10,200 Allied troops. One of these trips, on Friday, May 31, proved an interesting passage. While coming out of Dunkirk in the dark, the *St. Helier* was in collision with H.M.S. *Sharpshooter*. At the request of the captain, she had to keep steaming for forty minutes into the damaged minelayer to keep her afloat. With the engine at half speed, in darkness, she continued assistance to *Sharpshooter* until a tug took her in charge. No sooner free from this trouble than a peacetime pleasure boat, *Princess Eleanor*, picking her way through the confusion, crashed into *St. Helier* on the starboard bow. Damage was not serious, and both vessels proceeded on their course.

Heading for home, the *St. Helier* ran over a submerged wreck, but ship and troops arrived safely the next day. Within a few hours she was off again to Dunkirk harbour, now choked with wreckage, and with the quays almost demolished, and loaded a complement of troops. While alongside the quay, enemy guns opened up, but shells fell short. The ship was difficult to manœuvre, for the fore peak was full of water as the result of the previous night's adventure, and the fact that she made Dunkirk and embarked troops must be accounted a remarkable feat. This voyage, on Sunday, June 2, was the *St. Helier's* last trip to Dunkirk. The 2,000 men on board were amongst the last of the British Expeditionary Force to find safety.

The G.W.R. steamship *St. David* gave valuable help as a hospital carrier during the evacuation, until she became the victim of a near-miss which damaged her propeller shaft and machinery. Another G.W.R. steamer, the *St. Julien*, made her first visit to Dunkirk on May 24, 1940, embarking wounded for Newhaven. The *St. Julien* made several further trips across the Channel, but did not succeed in entering Dunkirk again until May 31, when more wounded were assisted aboard by the crew, under fire from German shore batteries. Two other G.W.R. steamers, the *Roebuck* and *Sambur*, also did valuable transport work under hazardous conditions.

* "Dunkirk and the Great Western," by Ashley Brown. Published by the G.W.R. Price 1s.

† "The Un-Beaten Track" by Collie Knox Cassell & Co. Ltd., London. Price 8s. 6d.

# LETTERS TO THE EDITOR

*(The Editor is not responsible for the opinions of correspondents)*

## New Stations

" Briarcroft," 29, Hesketh Road,
Southport. October 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In the railway companies programme for post-war improvements, new stations figure as a main plank. Of our larger stations it would seem that none would have a better claim for early attention than Birmingham (New Street). We have seen what can be done, as in the case of Leeds (New), now City, and the possibilities at Birmingham are most interesting.

I think it would be difficult to find a more inconveniently arranged station, both from the passenger and operating viewpoint. The circulating area seems to consist of a footbridge which gives access to all platforms. This, at times, is so crowded that passengers cannot move in either direction, and extra time has to be allowed to catch a train. I noted recently that some small white gates had been erected at the top of the steps leading to each platform. I do not know whether these are to aid the ticket collector, or to prevent passengers being pushed off the bridge down the steps. Further, the bridge is largely used as a public thoroughfare and what station could also boast a public roadway cutting right through its centre. One has to be quite nimble to avoid traffic when crossing from No. 3 to No. 4 platform. To add to the hazards, No. 2 platform, an island, has two running faces yet only one number, so one is quite apt to board the wrong train.

In my search for a ticket to Derby I discovered six separate ticket offices; two were situated on the aforementioned overbridge. After some trailing around, the ticket was forthcoming from a little office not much more handsome than a rabbit hutch. What a staffing problem all these offices must present!

Then, from the operating angle, why should all the principal expresses for Liverpool, Manchester, and the North start from No. 3 platform? This is more like a parcels dock, with vans always occupying part of it. Only half the coaches of a train can be accommodated, which necessitates a double pull up before the train can be dispatched to the North. These trains to Liverpool and Manchester incidentally, have deteriorated, in keeping with the drab platform from which they depart. They now consist largely of non-corridor stock; thus the end coaches cannot be boarded from the corridors, as previously. In one train recently the non-corridors comprised an amazing collection, including a M.R. narrow 4-coach rake, a Caledonian third brake, and an L.Y.R. composite. New Street, however, can take first place for its loud-speaker system; one has no doubt, when staying in the hotel, that the 11.5 p.m. is going to call at Motherwell, etc.

Yours faithfully,
E. HILL

## Standardisation of Signalling

" Highbury," Ashley Road,
Farnborough, Hants. October 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—A certain amount of attention recently has been focused in the national press on the serious effects of fog on the running of main-line trains on British railways. The note of criticism which has been struck is likely to become more strident as winter progresses, in view of the renaissance in services which has been advertised as commencing from October 1. The fact that the ravages and lack of development due to six years of war cannot be rectified instantaneously will tend to be overlooked by the constantly fog-bound traveller.

I feel, however, that the general question of standardisation of signalling systems and equipment should now come under review. Perhaps I should say at this stage that neither am I a " Pro-Nationaliser," nor do I hold any brief for standardisation for its own sake. On the question of signalling, it could hardly be said that basic standardisation would restrict development, as on many lines there are installations dating back many years (often to pre-grouping days). As things are, new works are always in the nature of an engineering compromise as far as extent is concerned (not, of course, in design). This can be evidenced by the still relatively low proportion of route miles where colour light signalling is installed.

There are several suggestions current as to the best system designed to obviate the human element (and so avoid fog delays). Continuous cab signalling and the use of radar are both popular. Surely, however, these are in too fundamental a stage for use on our railways, and, in any case, the cost, complexity and time taken for anything approaching a complete installation on our main lines would at present be prohibitive. May I therefore make a plea for immediate consideration to be given to A.T.C. in the form used with success by the G.W.R. for many years. Installation time and cost would be reasonable, and the result entirely satisfactory. There are two exceptions which would arise if the system is to be applicable to any type of signalling layout. Suggestions for modifications to deal with these exceptions are:—

1. In the case of electrified track, train-stops at stop signals would be used exclusively for arresting electric trains in the overlap, the A.T.C. ramps at distant signals serving only to give audible warning of the state of the distant. For steam trains using the same track, the train-stops would be non-operative, the ramps functioning in the normal way.

2. Where four-aspect colour lights are installed, the ramp at a signal showing two yellows would serve only to give audible warning for steam trains, the ramp at the signal showing one yellow serving to apply the brakes automatically. Train-stops " on the red " would be used to stop electric trains as above.

There is room for further standardisation in signalling equipment, which I should like to discuss at a later date, but I should be interested in hearing the views of your readers on the above suggestion, especially in view of the need to make British railways once more the finest in the world.

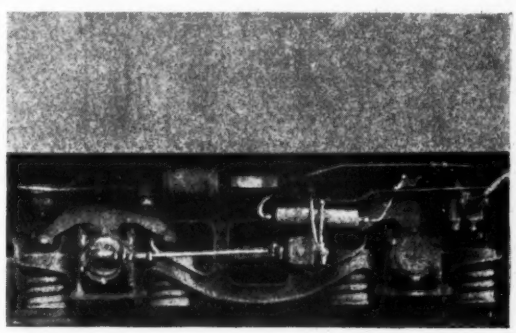
Yours faithfully,
P. J. H. TURNER

## Flexible Shaft Drive for Railway Carriage Electric Generators

Cleveland, Barker Road, Sutton Coldfield,
Nr. Birmingham. October 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In connection with the article on page 420 of *The Railway Gazette* of April 27 last about flexible shaft drive for railway



carriage electric generators, I enclose a photograph of the equipment. This is fitted to one of the bogies of the tender of a class " 01 " Pacific.

Yours faithfully,
E. S. RUSSELL

## Fluorescent Lighting in Railway Rolling Stock

London Passenger Transport Board,
55, Broadway,
Westminster, S.W.1. October 24

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It is so seldom that one can find a flaw in *The Railway Gazette* that I feel obliged to call attention to the paragraph dealing with fluorescent lighting in a District Line car, which appeared in your issue of October 20, 1944, and which was subsequently pictured in your issue of October 27, 1944.

Apparently, the Great Western Railway has now produced a car equipped with fluorescent lighting, and your issue of October 12, 1945, describes it an states that " the new passenger vehicles will be fitted with fluorescent tubular lighting never previously used in rolling stock."

Yours faithfully,
W. W. HOWELLS,
For Public Relations Officer

[We have also received a letter from Mr. V. Boyd-Carpenter containing similar information and pointing out that the first London Transport coach equipped with fluorescent lighting went into service on October 13, 1944. In our description of the G.W.R. vehicle, we should have said that this lighting had never been used previously in rolling stock *of the main-line railways*.—ED., R.G.]

# The Scrap Heap

A Minister with Sense of Humour

"I am not responsible for all those interesting incidents that happen on the railways."—*Mr. Barnes, Minister of War Transport replying to Questions in Parliament.*

* * *

S.R. Hop-Pickers Traffic

During the 1935 hop-pickers season just concluded, the Southern Railway ran nearly 300 special trains to and from the Kent hop fields, for hop-pickers and their weekend friends, compared with 230 in 1944. Altogether more than 135,000 persons were carried in 1945 against 120,000 in 1944.

* * *

## 100 YEARS AGO

*From* The Railway Times, *Nov.* 2, 1845

GREAT WESTERN RAILWAY.—On and after Saturday, the 1st of November, 1845, the following alterations will take place in the Goods Trains on this Railway:—

The 4.30 A.M. Down Goods Train will start from Paddington at 4 o'clock A.M. The intermediate traffic of the Stations between London, Bristol, Gloucester, and Oxford will be carried on by means of this Train, in order to relieve the other Trains of the numerous delays at the minor stations.

There will be an additional Goods Train from London to Exeter at 2 15 P.M. daily, excepting Sundays.

The Night Train, starting from Paddington at 9 30 P.M. will be devoted to the "long" traffic of the line.

The 6 30 A.M. Third Class Train, will be continued direct from Bristol to Exeter. Third Class Passengers, private carriages, and horses at the reduced rates, will be conveyed only by this last Train and the 2 15 P.M. Goods Train.

An additional Up Goods Train will start from Exeter at 7 5 A.M. in conjunction with that arriving at Paddington at 12 o'clock at night.

A Train will start from Bristol at 3 o'clock A.M. daily, excepting Sundays, for the intermediate traffic of the line, the present 2 o'clock Up Goods Train being devoted to the long traffic.

The Third Class Passenger Train will start from Exeter at 6 o'clock A.M. and from Bristol at 11 30 A.M. instead of 10 10 A.M. as at present.

Third class passengers, private carriages, and horses, at the reduced rates, will be conveyed only by this last train; and that from Exeter, at 2 o'clock, P.M.

On and after Saturday, the 1st November, the 7 15 A.M. third class Train from Taunton to Exeter, that at 9 o'clock A.M. from Exeter to Wellington, and that at 4 30 A.M. from Bath to Bristol, will be discontinued.

The 1 45 P.M. Passenger Train, from Maidenhead to London, will start at 1 30 P.M.

The Train from Gloucester at 10 20 A.M. will start at 10 45 A.M.

Time bills, giving particulars of these alterations, may be obtained at the railway stations on and after Thursday.

By order of the Directors,
CHARLES A. SAUNDERS, Secretary.

Paddington, Oct. 28, 1845.

Inherent Vice and Virtue

"The inherent vice of Capitalism is the unequal sharing of blessings. The inherent virtue of Socialism is the equal sharing of miseries."—*Mr. Winston Churchill during the House of Commons debate on demobilisation.*

* * *

Might Apply to Railway Refreshment Rooms

I must call the attention of the hon. gentleman to the fact that it is not in accordance with long Parliamentary experience that anyone in any part of the House should, at any time, say a kind word about the Kitchen Committee.—*Mr. R. C. Morrison, replying to Questions on the House of Commons Refreshment Department.*

* * *

Special daily B.A.O.R. leave trains are to run from Hull. There will be three trains a day, to Edinburgh, Manchester and London and they will carry a total of 14,000 men.—*From "The Daily Express."*

Nearly 5,000 men per train must be a new record in train length and overcrowding!

* * *

Rich Porters

Railway porters at the big London stations are among the aristocrats of labour. "Some of them could buy me out," said the Stationmaster at one terminus. He estimates that their wages with overtime amount to between £5 and £6 a week, and the tips a further £10 to £15.

Another result of "quilling"—as the porter calls tipping—is that frequently promotion is refused. "We have great difficulty," said my Stationmaster, "in getting men to become foremen or inspectors."—*From "The Londoner's Diary" in "The Evening Standard."*

* * *

Most Be-Tunnelled Route to Scotland

During the war a curious record has been created by the 10 a.m. L.M.S.R. express from St. Pancras to Glasgow, for by reason of the route followed it has passed daily through more tunnels than any other long-distance train in Great Britain. The route concerned is *via* Kettering, Nottingham, Trent, Derby, Chesterfield, Sheffield, Leeds, Carlisle, and Dumfries. On this journey of 444 miles the train has passed through 40 tunnels ranging in length from 100 to 2,290 yd., and with a total length of about 15 miles. Six of the tunnels (Belsize, Corby, Glaston, Clay Cross, Bradway, and Blea Moor) are over a mile long. The most be-tunnelled length is between Kettering and Nottingham, where in the 39 miles from Corby to Plumtree there are ten tunnels with a total length of exactly 5 miles; next comes the Settle and Carlisle section, with 14 tunnels, mostly short, in 65 miles. Another curious point is that through Trent Junction this northbound train during the war has travelled daily almost due south; also that during the earlier years of the war the 10 a.m. from St. Pancras to Glasgow and the 10 a.m. from Glasgow to St. Pancras stopped daily at the same platform at Trent, both travelling in the same direction

*"If you'll look again, sir, you'll see that the smoked salmon is on the* 10.15 *via Nottingham"*

[*Reproduced by permission of the proprietors of "Punch"*

### RAILWAY QUESTIONS AND ANSWERS

**Statement:** It is sometimes alleged that food on British railways and stations is a disgrace.

**Answer:** Like so many of the allegations against railways this is a generalisation. It takes no account of the fact that: (*a*) Before the war on the first and third class fast long-distance trains such as the "Royal Scot," the "Flying Scotsman," the "Cornish Riviera," the "Bournemouth Belle," and the business trains between large towns, there was an excellent service of breakfasts, luncheons, teas, and dinners used by 8,000,000 passengers in 1938. (*b*) The majority of meals on railway trains are served, however, to third class passengers. The price has to be one which the passenger can afford readily, that is, from 2s. 6d. to 5s. a meal. This is very small in view of the difficulties and peculiarities attached to catering on a moving train, and offers very little scope for providing either the variety or the quality of meals served to first class passengers at 5s. to 7s.6d. Nevertheless, meals served to passengers travelling third class compared favourably in quality with those provided by restaurants at which similar prices were charged. A large number of buffet cars has been provided to meet the need of passengers requiring cheap, light meals. It is true that a number of refreshment rooms and buffets are not modern in design or in the facilities provided, but before the war the railways rapidly were improving these amenities, although with the growth of facilities for meals on trains the demand was reduced. The railways will continue this work with large-scale schemes of modernisation after the war. Examples of what has been done already are the refreshment rooms, buffets or railbars at Charing Cross, Liverpool Street, Kings Cross, St Pancras, Richmond, and Paddington in London, and at Brighton, Cardiff, Chester, Doncaster, Exeter, Glasgow Central, Leeds, Southampton, and York.—*From "Answers to Questions and Statements," issued by the British Main-Line Railway Companies, 22, Palace Chambers, London, S W 1*

* * *

Perpetual Motion

Though they have rolled over more than four and a half millon miles of track already, four locomotives built for the Canadian Pacific Railway between 1882 and 1887 are still doing service on branch lines in Eastern Canada. When they made their debut in the 80s, these engines were the latest in wood-burning locomotives; they now burn coal.

The oldest of the quartet, engine No. 105, is an 1882 product of Dubs & Company of Glasgow; her mileage now is 1,300,000. On the Maritime line, No. 105 is teamed up with No. 144, built by the C.P.R. in Montreal in 1886; her mileage now is 1,200,000.

The other two 60-year-old locomotives pull mixed passenger and freight trains. The senior, No. 136, was American built in 1885. Running mate for No. 136 is engine No. 30, another product of the Montreal Shops in 1887; she worked more than 1,044,000 miles.

* * *

Tailpiece

(*Wounded Service men in hospital blue must not be turned out of first class railway compartments when third class accommodation is not available*).

Inspector, please, pray tell me this
If I have done something amiss—
I've a first class ticket, paid my fare—
And yet there are no seats to spare.

I came quite early to the train,
In order that I might abstain
From standing all the way to town,
For surely this will get me down.

I cannot sport a suit of blue,
Nor have I wounds, but hitherto
I've travelled first whene'er I could
Though oft in corridors I've stood.

Am I first class? Perhaps I'm not,
What if I am, who cares a jot?
But if I may not be first class,
I'll travel third—so let me pass.

W. E. N.

# OVERSEAS RAILWAY AFFAIRS

*(From our correspondents)*

## SOUTH AFRICA

### Financial Position

The working of the railways, harbours, steamships and airways during the month of June, 1945, resulted in a deficit of £57,856. Revenue for the month from all services was well maintained and exceeded the estimate by £254,888, but expenditure continued to rise and was £314,160 more than originally estimated. Compared with the estimate the principal increases for the month were in respect of railway transport services. Earnings from goods and livestock were greater than expected, but coal receipts were lower because of decreased railings due to wagon shortages. Greater costs in connection with maintenance of way and works and rolling stock, as well as additional running and traffic expenses, account chiefly for the high expenditure recorded during the month.

The accumulated deficit for the three months, April to June, 1945, was £641,763, or £187,944 more than the deficit incurred during the corresponding period of the last financial year.

Revenue increased by £1,979,491 over the corresponding three months of 1944, but expenditure advanced by £2,167,435 mainly because of the improved rates of pay to the staff, higher cost of living allowance payments, and increased operating costs.

## NIGERIA

### General Strike and Railway Services

At midnight, June 21-22, a general strike took place in Nigeria, affecting public-utility, Post Office, marine and railway workers. They disregarded their union leaders, who at the last moment had advised against the strike. The point at issue was the question of an increase in the cost-of-living allowance, but the necessity for this was not conceded by the Government, which pointed out the widespread evil of the black market which caused a shortage of necessary foodstuffs. The regulation procedure for conciliation had not been adhered to, consequenly the strike was illegal and the Government refused any consideration of the complaint until men had returned to work, which did not occur generally before August 7.

When the strike started the railway came to a complete standsill, with most of the trains in transit left standing at the nearest stations, no matter how far from or near to their depot stations. Complete preparations had been made beforehand to cope with a 100 per cent. strike of African workers; and with what amounted to a handful of European supervisory and inspecting officers, assisted by volunteers from the Army, emergency working was brought into operation. Throughout its 1,900 miles, the Nigerian Railway is of single line controlled by electric train staff; and it was necessary to introduce the system of fixed crossing places with written authority to proceed to the next crossing station, each of which was under the charge of a European traffic officer. Shed foremen quickly cleared their sections, and distributing trains, conveying staff to man pumping stations, to afford track patrols and to assist in shed or yard working, left their district headquarters on the morning of June 23.

The first through skeleton train, a mixed one, composed of coaching stock, and goods and cattle wagons, left Kano on June 26 for Lagos; the up train left Lagos on June 27. Throughout the 6-7 weeks of the strike, running only in daylight hours, the scheduled skeleton train service was maintained 3 days a week. The run from Lagos to Kano is 700 miles, and connections were afforded at Kaduna Junction with Jos (735 miles) and with Enugu (984 miles) and Port Harcourt (1,135 miles). Additional trains were run as and when circumstances permitted, and coal was moved from Enugu to Port Harcourt to keep the colliery going and supply cargo and bunker coal to shipping.

An appreciable tribute needs to be given to all those European officers whose freely-given efforts enabled communications to be maintained throughout the main line, and essential foodstuffs, passengers and mails to be carried regularly to their destinations. Footplate conditions in the tropics have to be experienced before they can be appreciated adequately.

### Repercussions of the Strike

The effects of the strike will cause serious repercussions, for some months to come. The power position, already handicapped by the fact that locomotives have been overworked and during the past four years hauled record tonnages of both goods and passenger traffic, is now further set back. Some 28 locomotives should have received a general overhaul during the period of the strike; and the addition of these to the normal repair programme means that the busy produce season which starts towards the end of October will have to be met with approximately 65 per cent. of the main-line locomotives in traffic.

Regular train services were resumed as from August 20, but it has been necessary to reduce to 30 per cent. below normal, which will have to continue for some time.

## UNITED STATES

### Norfolk & Western "J" Class 4-8-4 Locomotives

A fine example of efficient modern steam passenger motive power is provided by the "J" class 4-8-4 locomotives of the Norfolk & Western Railway, eleven in number, built at the company's own Roanoke shops in 1941. They have 27 in. by 32 in. cylinders and 275 lb. pressure, and with their relatively small driving wheel diameter of 70 in. have the high rated tractive effort of 73,300 lb., with an additional 12,500 lb. in the case of one of the series which is fitted with a booster. Each engine weighs 221 tons, of which 128½ tons is available for adhesion; the twelve-wheel tender, with 35 tons of coal and 20,000 gal. of water, weighs 169 tons loaded, making 390 tons for engine and tender. Combined heating surface is 7,448 sq. ft., and grate area is 107·7 sq. ft.; the engines can exert a drawbar h.p. of over 5,000. Roller bearings are fitted throughout, and in the design close attention was paid to the matter of lubrication, both with oil and grease.

As a result, these locomotives have been unusually light on maintenance. By comparison, two class "A" 4-6-6-4 articulated locomotives of Roanoke design and build in 87 months ran 1,310,319 miles at an average of 285 miles a day, and their maintenance worked out at 21·12 cents per locomotive-mile; they were in service for 62·9 per cent. of the potential hours. Over a period of 36 months two of the class "J" 4-8-4s averaged 412 miles daily for a total of 822,402 miles, at a maintenance cost of 11·54 cents per locomotive mile, and were at work for 70·8 per cent. of the potential hours.

These engines handle passenger service over the 676½ miles of the Norfolk & Western main line between Cincinnati, Roanoke, and Norfolk, Virginia. The longest continuous run is the 424¼ miles between Cincinnati and Roanoke, and the next longest is the 252¼ miles between Roanoke and Norfolk. With shorter runs interspersed, a typical weekly roster covers 3,368 miles; the loads of the trains vary from 8 or 9 to 17 heavy standard cars, with an average of about 13 cars, weighing about 1,000 tons. The route lies for a large part through mountainous country, and has very heavy grades; over several divisions these are at a ruling inclination of 1 in 70, while between Williamson and Bluefield, Virginia, the steepness increases to 1 in 50. This last is the only section over which the "J" class 4-8-4s cannot tackle the normal 15-car maximum formations (about 1,150 tons) without taking assistance. Stops are fairly frequent, amounting to as many as 31 on some through runs between Cincinnati and Norfolk, and the necessity for rapid acceleration and the heavy grades are jointly responsible for the choice of the small driving wheel diameter of 5 ft. 9 in.

## CHINA

### Nanking Railway

Nanking, with a pre-war population of one million, is situated on the Yangtze river, about 280 miles from its mouth on the Yellow Sea. The city is served by two main railway lines from Shanghai and Tientsin respectively. The latter, however, has its terminus at Pu-kow, on the northern bank of the Yangtze, opposite Nanking. The city is some distance from the southern bank of the river and the main line from Shanghai has its terminus, known as the central station, on the northern outskirts, outside the perimeter wall, which is reputed to be the longest in China. An extension from the central station, ending at the river station (known as Kiang-kou Station) facilitates the traffic with the steam ferry linking with Pu-kow. At this point, the Yangtze is about 1¼ mile wide. From the central station, a branch railway line leads first in a south easterly direction along the outside of the town wall and enters the city after about 1¾ mile. The last two miles of the line are due south. The terminus of the line, some 6¾ miles from the central station, is known as the Tsung-tsen-kai Station and is located in the southern part of the town, about a mile to the south west of the Nanking aerodrome. This branch line provides the best connection, not only with the central station and the river station, but also with the northern part of the town, where there is an intermediate station (the only one of the line) known as Wu-liang-an Station, about three miles to the north of the Tsung-tsen-kai terminus. Between these two stations the line skirts the inner group of Government buildings: the building of the Kuo-ming-tang Authority is situated to the north of Wu-liang-an Station.

## CEYLON

### Improvement of Permanent Way

Among new works planned by the Ceylon Government Railway in the financial year 1945-46 is the improvement of the permanent way. This comprises the relaying of about 50 miles on the Coast Line with new rails because of constant deterioration by corrosion. Other works include repairing and strengthening a number of bridges, and the renovation and improvement of stations.

## The "Paget" Locomotive

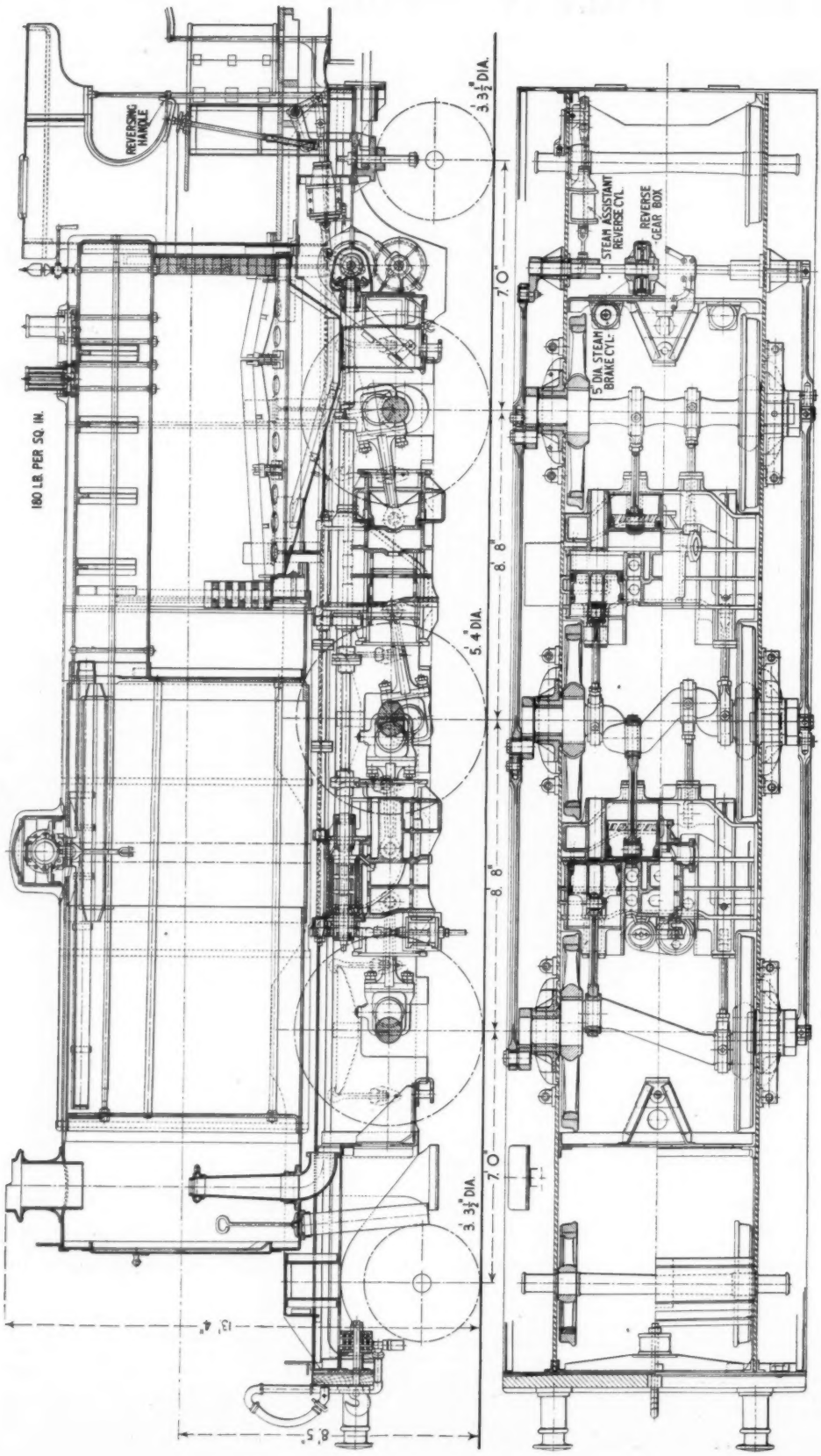



*Fig. 3—General arrangement drawing and plan of the "Paget" locomotive*

# The "Paget" Locomotive

## *Eight single-acting cylinders with rotary valves—An application of the principles of the Willans central-valve engine to the steam locomotive*

*By James Clayton, M.B.E., M.I.Mech.E.*

THE *Railway Gazette* for April 21, 1944, referred to the geared drive for steam locomotives and included a mention of the "Paget" 2-6-2 engine built by the Midland Railway at Derby in 1907-8. The engine was numbered 2299 and as illustrated by the photograph and diagram Figs. 1 and 2, was of quite substantial proportions.

It is proposed in this article to deal with some of the special features of the engine and the objects which its designer had in view. The engine had 8 single-acting cylinders, 18 in. dia. x 12 in. stroke with rotary steam-distribution valves, but the system of drive was direct, and not geared as implied in the reference. The only gear used on the engine was employed for driving and reversing the valves. The principles as applied to a locomotive were patented by Mr. (afterwards Sir) Cecil W. Paget who at the time was Works Manager at Derby under Mr. R. M. Deeley, the Chief Mechanical Engineer.

It is recorded that while taking a course of study in engineering at Pembroke College, Cambridge University, Cecil Paget was fascinated by the success of the Willans high-speed, central-valve engine and conceived the idea of applying the principles embodied therein to the problem of the steam locomotive. Sets of Willans' engines had been installed by the Midland Railway in its power house for the supply of electric current to Derby Works, offices and railway station, and had proved eminently successful, as they were cheap and economical to run, and the wear measured over a number of years was infinitesimal; withal they were beautifully designed and constructed.

So while he carried out his duties as Manager of the works at Derby, Paget busied himself in his spare time, thinking out schemes which were to culminate in the type of locomotive he had set his heart on. It was to be of the 4-6-0 wheel arrangement, subsequently changed to 2-6-2, with eight single-acting cylinders having rotary steam distribution valves, with the exhaust taking place at a fixed point at the end of the stroke, through ports in the cylinder barrel. The main frames were placed outside the driving wheels, and this ingeniously provided room for the four fairly large diameter cylinders to be accommodated, as will be noted in the drawing, Fig. 3. The overlapping of the two cylinder barrels provided in a simple way common access for the steam between the two. As the cylinders were single-acting, there was no reversal of thrust or stress in the parts such as the connecting rods, which were thus always in compression. The short stroke of the pistons simplified balancing while the multiple arrangement of cylinders reduced the condensation losses by dividing the temperature drop amongst them.

*Rotary Valves.* The steam distribution valves were placed horizontally on the centre-line of the engine, one above each set of cylinders; the steam chest being integral with the cylinder casting as shown in Fig. 4. Much time and thought was expended on the design and construction of the valve and liner, and it was this element which proved most difficult to solve. In the first proposals Paget placed the valves vertically between each set of cylinders to be driven individually by chain from the intermediate and trailing axles respectively. This arrangement was discarded ultimately in favour of the horizontal position of the valves driven by through shaft as shown in Fig. 5.

Tests carried out with the vertical valve proved its instantaneous opening and closing, and extended over a year or more

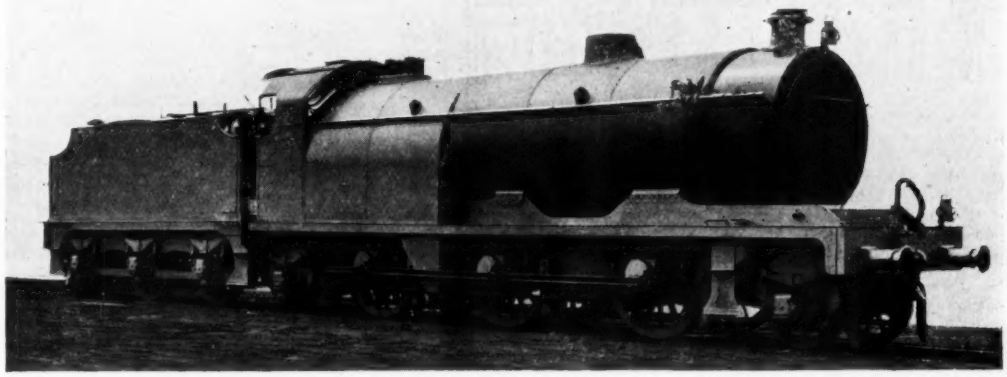


*Fig. 1—General view of the "Paget" 2-6-2 locomotive, Midland Railway*

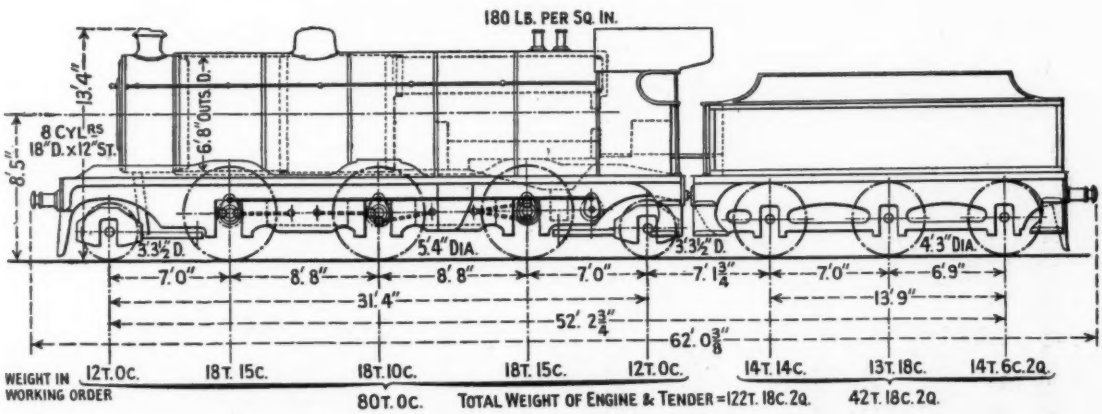



*Fig. 2—Diagram of "Paget" locomotive showing principal dimensions and weights*

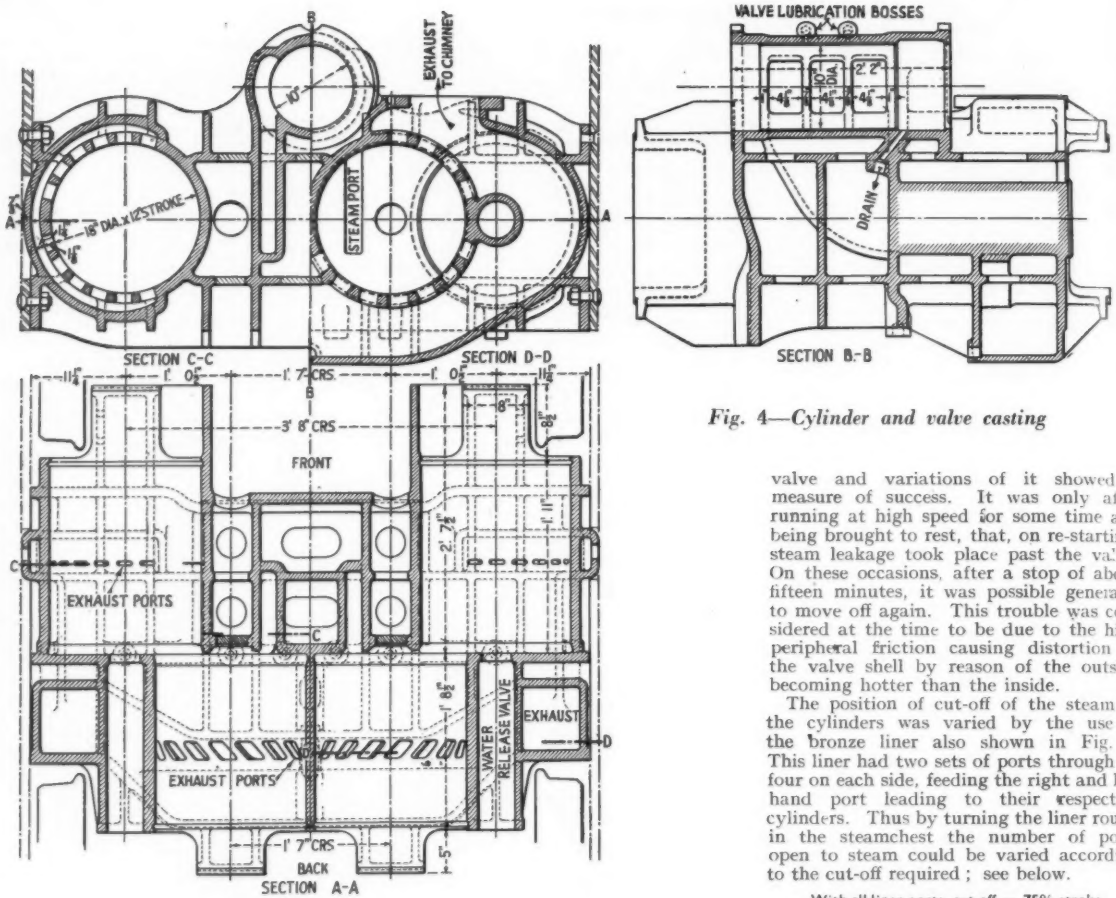



*Fig. 4—Cylinder and valve casting*

to ascertain the steam tightness and the amount of power required to drive, as well as the extent of wear of the rubbing surfaces. In addition, these tests furnished data for the sizes of shafting and gear for driving both valves and cut-off liners as the design of the engine was developed. It was ascertained that the power absorbed in driving the rotary valve would not be more than 30 per cent. in excess of that required by the ordinary "D" slide valve in use at the time on the standard goods engines of the Midland Railway.

These results were obtained by fluting the inside of the liner with relief grooves so as to balance about 40 per cent. of the surface under pressure. The first valve tried in service was of simple form, consisting of a cast-iron cylinder, split in its length at the centre of the port, as shown in Fig. 5, so that the steam pressure inside could expand it to fit steam-tight in the liner. The actual trials with this valve and variations of it showed a measure of success. It was only after running at high speed for some time and being brought to rest, that, on re-starting, steam leakage took place past the valve. On these occasions, after a stop of about fifteen minutes, it was possible generally to move off again. This trouble was considered at the time to be due to the high peripheral friction causing distortion of the valve shell by reason of the outside becoming hotter than the inside.

The position of cut-off of the steam to the cylinders was varied by the use of the bronze liner also shown in Fig. 5. This liner had two sets of ports through it, four on each side, feeding the right and left hand port leading to their respective cylinders. Thus by turning the liner round in the steamchest the number of ports open to steam could be varied according to the cut-off required; see below.

With all liner ports, cut-off = 75% stroke
With 3 liner ports, cut-off = 59% ,,
With 2 liner ports, cut-off = 42% ,,
With 1 liner port, cut-off = 25·5% ,,

The valves had no lead

The rotary valves were driven by a sleeve, keyed to the longitudinal shaft, having short projecting arms which in turn engaged slot projections on the inside of the valve as shown in the section through the steam chest. The longitudinal shaft, passing through the centre of both steamchests was in turn driven through the gear box by the hind

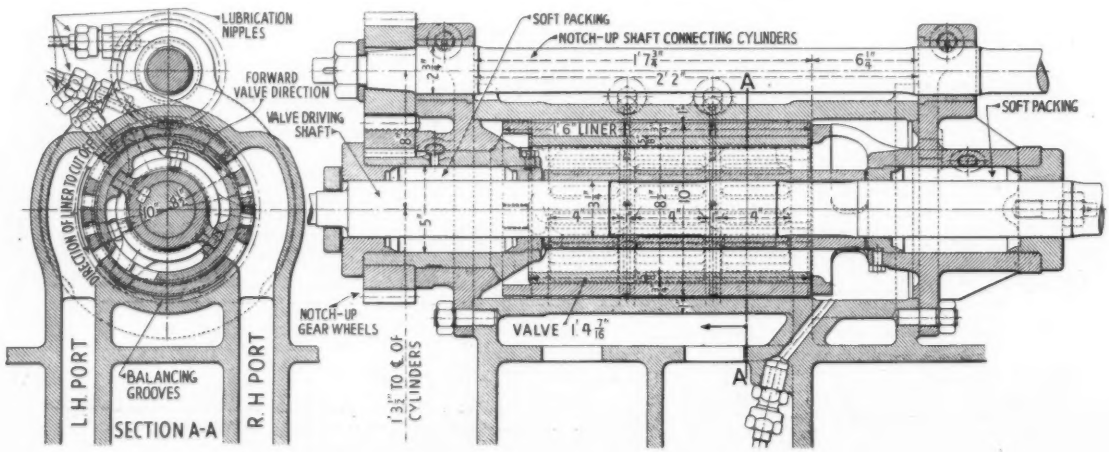



*Fig. 5—Section through steam chest with valve and liner*

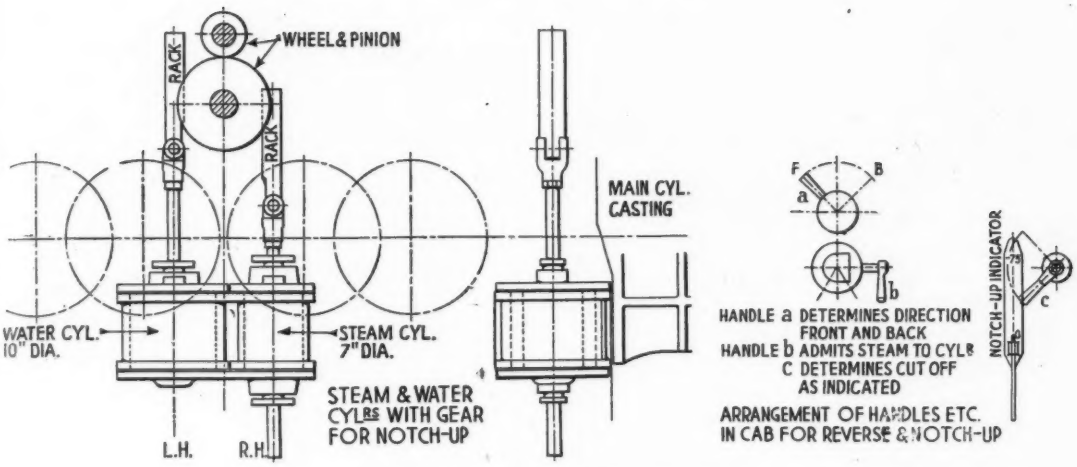



*Fig. 6—Steam and water cylinders with gear for notch-up and arrangement of handles, in cab for reverse and notch-up*

cross shaft which had crank arms mounted on each end, at right angles to one another; motion was imparted by extensions from the trailing coupling rods on each side of the engine (Fig. 3). The speed of revolution of the valves was therefore the same as that of the main driving wheels.

The gear-box, Fig. 7 contained not only gearing to drive the longitudinal shaft at right angles to the cross-shaft but also the epicyclic train of gears which enabled the valves to be reversed. This train of gears was arranged on the well known principle of the differential gear used in motor vehicles (which enables the driving wheels mounted on the same axle to revolve independently when negotiating curves and corners); the whole was housed oil tight in the casing. The gear-box complete was beautifully made by the well-known firm of David Brown & Co. Ltd., of Huddersfield, to the drawings and specification provided by the Midland Railway, Derby.

Fig. 7*a* shows ths flexible ball-joint used for the extension of the coupling-rod, driving the gear box through the cross-shaft and thus providing for relative movement of driving axle and flexure of main frames.

The point of cut-off of the steam to the cylinders was varied, as already mentioned, by turning the bronze liners in the steamchests. For this purpose the sleeves at the front of each steamchest (which contained the stuffing box to keep the revolving valve shaft steam tight) was provided on the inside with a three-star drive engaging the end of each liner and on the outside with a toothed wheel as shown in Fig. 5, Vertical racks, one on each side engaged the toothed wheel at the front steamchest and conveyed the steam and hydraulic cylinder power, enabling the driver to control and adjust easily and readily the notch-up position from the footplate. The arrangement of the steam and hydraulic cylinders for notching-up is shown in Fig. 6; the driver's valves are shown in the diagram inset as mounted on the cab-side close to the driver for convenient manipulation. The reversing was effected by a vertical screw with handle in close relation to the driver, see Fig. 3. An assisting cylinder was provided.

*Pistons.* The pistons were of the trunk variety and transmitted the thrust of the connecting rod direct to the cylinder walls. For this reason both front and hind pistons were long and had ample wearing surface as shown on the drawing, Fig. 8 and 8*a*. They were both fitted with the (at that time well-known) Rowan type piston rings in the position shown. The front pistons had three rings and the hind pistons two rings each. On trial these were found very satisfactory and there was no serious leakage of steam past them.

*Driving Axleboxes.* The driving bearings were of liberal dimensions, being 8½ in. dia. x 10 in. long; the axleboxes were of solid bronze. A cross section of these is shown in Fig. 9 with its easily-detachable cellar or bottom box which provides for ready inspection of the oil pad. Top lubrication, from oil recesses cast in the axle box, assisted in keeping the bearing cool.

*Driving Crank Axles.* As will be noted from the general arrangement of the engine, Fig. 3, the three crank axles were each different from the other as the crank-throws have to suit the disposition of the respective cylinders. Their design presents several features of unusual interest, as for instance the large wheel boss to include the crank-throw within its diameter, while the intermediate or middle driving-axle forms a clever combination of the leading and trailing driving-axles as shown by Fig. 9*a*. The main axle-bearings in each case are outside the wheels and each is extended to provide for the outside coupling-rod crank-arm. All the crank-axles were of "solid forged and bent" construction made by Messrs. Rixon of Sheffield who made a speciality of this form of crank manufacture. They were indeed considered, at the time, a worthy tribute to Sheffield craftsmanship.

*Connecting Rods.* The connecting rods were of simple but robust design as shown in Fig. 10. The big-end brasses were of the square-end form as commonly used in locomotive design and were convenient for linering when requiring re-fitting. The straps were of the simple forged and bent type secured by castellated nuts with flat cotters, a pattern often found in

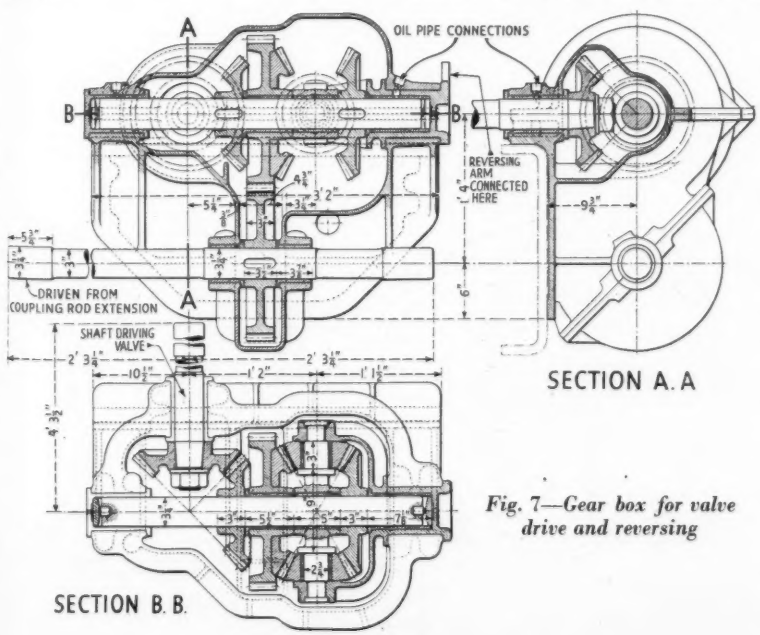



*Fig. 7—Gear box for valve drive and reversing*

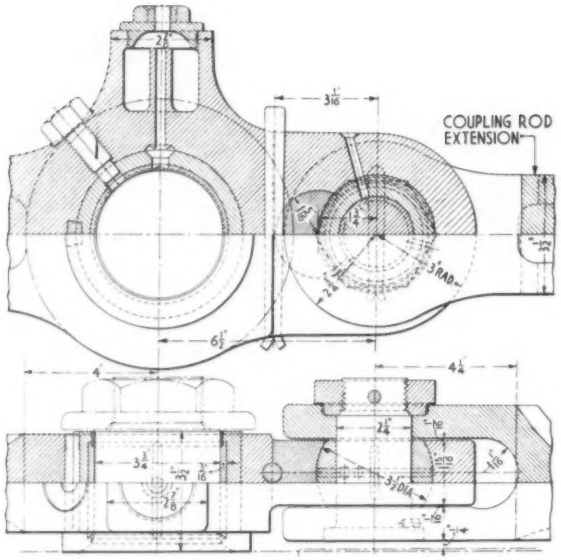



*Fig. 7a—Flexible ball joint for gear drive*

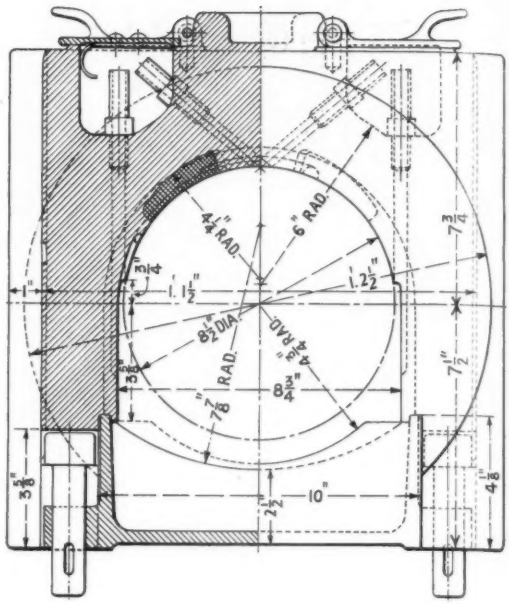



*Fig. 9—Cross section of driving axlebox*

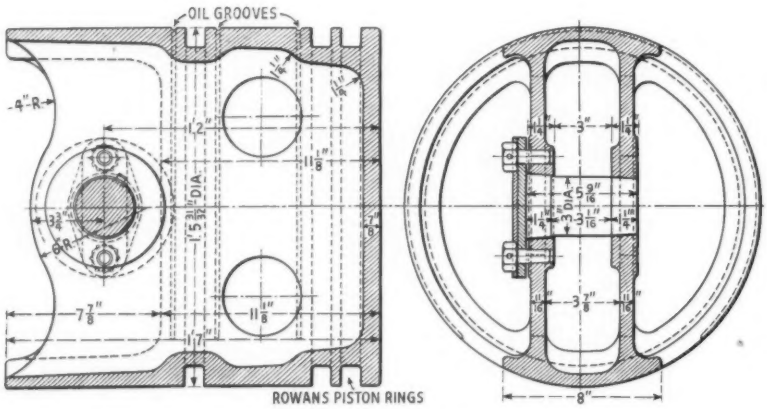



*Fig. 8—Front piston*

Continental practice. The small-end was of the solid bush variety common to the Midland and railway practice generally.

*Swing-Bolster Trucks.* The front and hind ends of the engine were carried on two-wheel pony trucks of the swing-bolster two-pin control type. Its design is illustrated in Fig 11, and embodies a simple but robust form of frame construction to accommodate outside bearings and readily accessible spring gear.

*Boiler and Firebox.* Paget's original design of the engine had the 4-6-0 wheel arrangement. It was to embody a boiler having a circular corrugated rolled cylindrical steel firebox, which he adopted so as to simplify the boiler and firebox construction and especially to reduce the heavy maintenance work involved by the use of copper firebox water-space stays of, what was at that time, orthodox practice. For this type of boiler and firebox he later altered the wheel arrangement to 2-6-2 and substituted an entirely original design of firebox as illustrated by Fig. 12. Always a keen running man, Paget knew the value of a good boiler and adopted one of ample proportions; the barrel was 6 ft. 8 in. dia. outside at the front and, as constructed, the firebox had 55 sq. ft. of grate.

The firebox furnace was formed by the use of high-class firebricks 6 in. thick for the sides and back walls; while at the front was a cross-bridge of firebrick 9 in. thick and made hollow to allow the inlet air to be heated and delivered at the entrance to the combustion chamber before the hot gases entered the boiler tubes. The wide firegrate was made up of cast-iron firebars arranged specially to allow of the firing being done with ease and comfort, two fireholes were provided for this purpose (see Figs. 3, 12 and 14). This unique design of boiler and firebox, though very unorthodox, was found to steam well and gave promise of being easy to manage and manipulate during the comparatively short life allowed it.

*Ashpan and Firebars.* The arrangement of ashpan and firebars is shown by Fig. 13 from which will be noted several unusual features. The ashpan was of the self-cleaning variety in which hoppers were provided in the bottom for dumping the remains of the fire and clinker from the grate through the space left after lifting one or two firebars. In the front of the bottom of the pan will be noted a series of nozzles, from each of which a

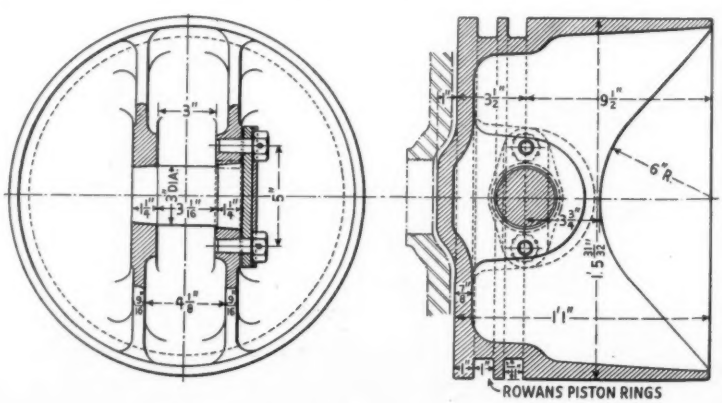



*Fig. 8a—Back piston*

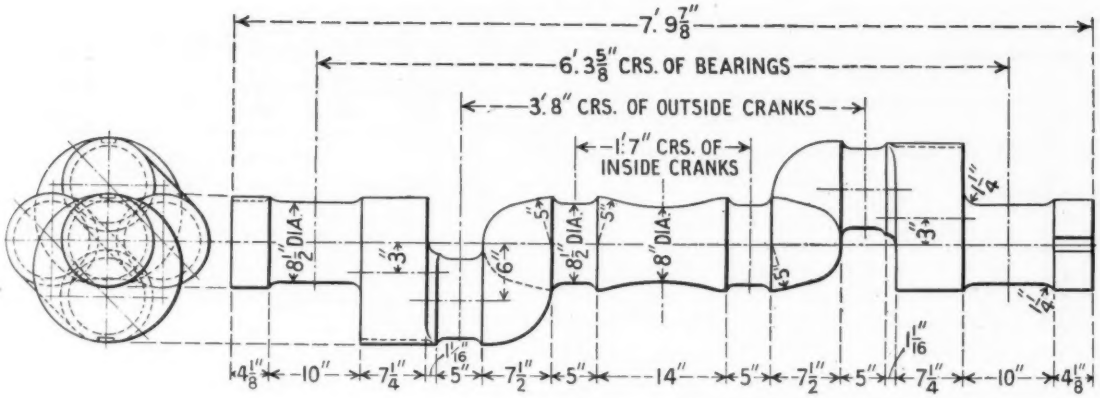



*Fig. 9a—Intermediate crank axle*

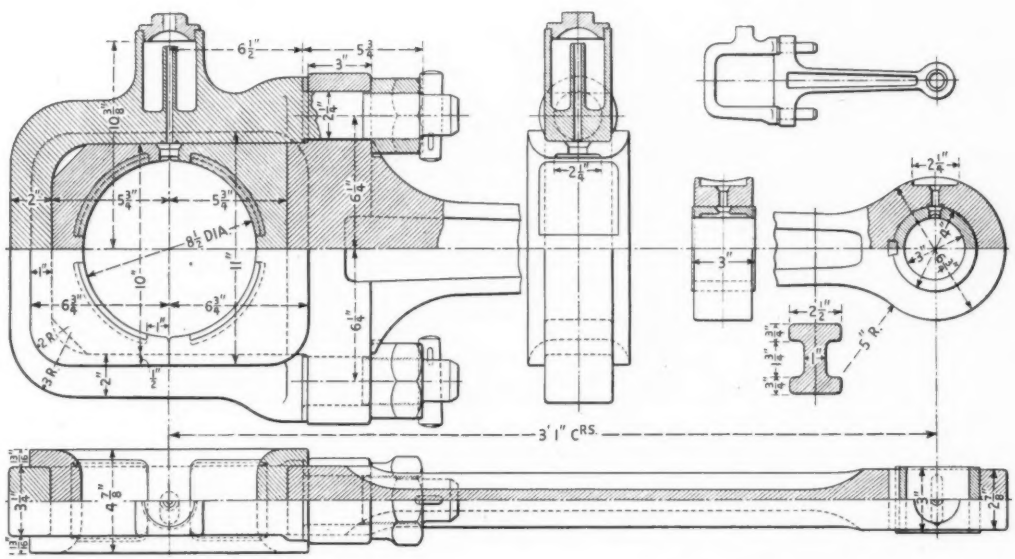



*Fig. 10—Diagrams showing principal dimensions of connecting rod*

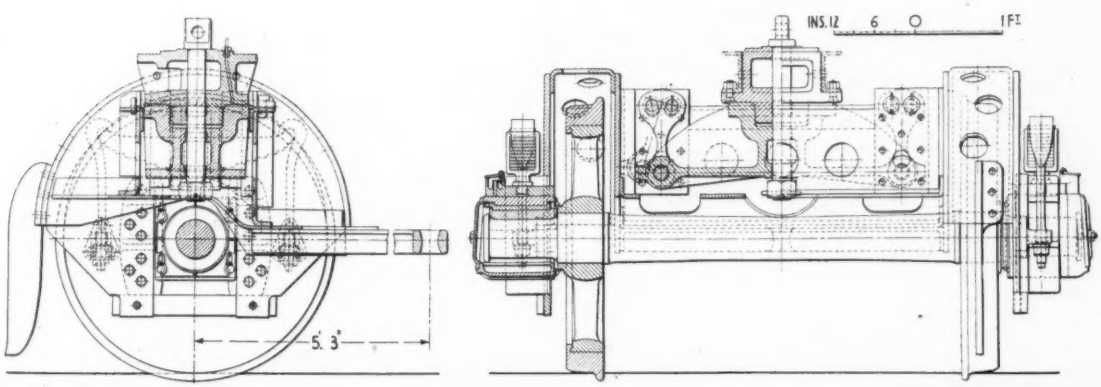



*Fig. 11—Front and back swing bolster truck*

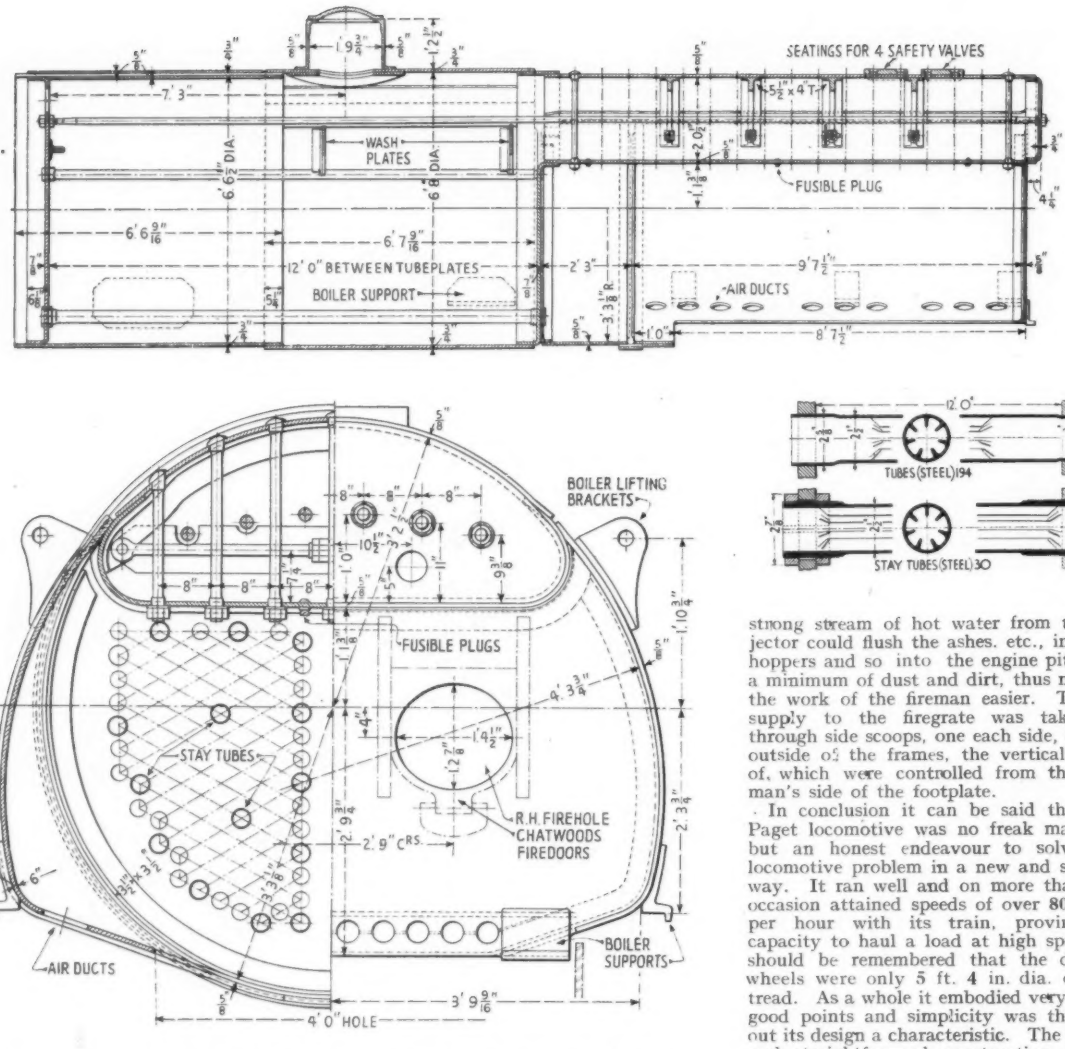



*Fig. 12—Longitudinal section and cross section of boiler and firebox*

strong stream of hot water from the injector could flush the ashes, etc., into the hoppers and so into the engine pit, with a minimum of dust and dirt, thus making the work of the fireman easier. The air supply to the firegrate was taken in through side scoops, one each side, on the outside of the frames, the vertical doors of which were controlled from the fireman's side of the footplate.

In conclusion it can be said that the Paget locomotive was no freak machine, but an honest endeavour to solve the locomotive problem in a new and simpler way. It ran well and on more than one occasion attained speeds of over 80 miles per hour with its train, proving its capacity to haul a load at high speed; it should be remembered that the driving wheels were only 5 ft. 4 in. dia. on the tread. As a whole it embodied very many good points and simplicity was throughout its design a characteristic. The simple and straightforward construction of the boiler will be acknowledged while the fire-

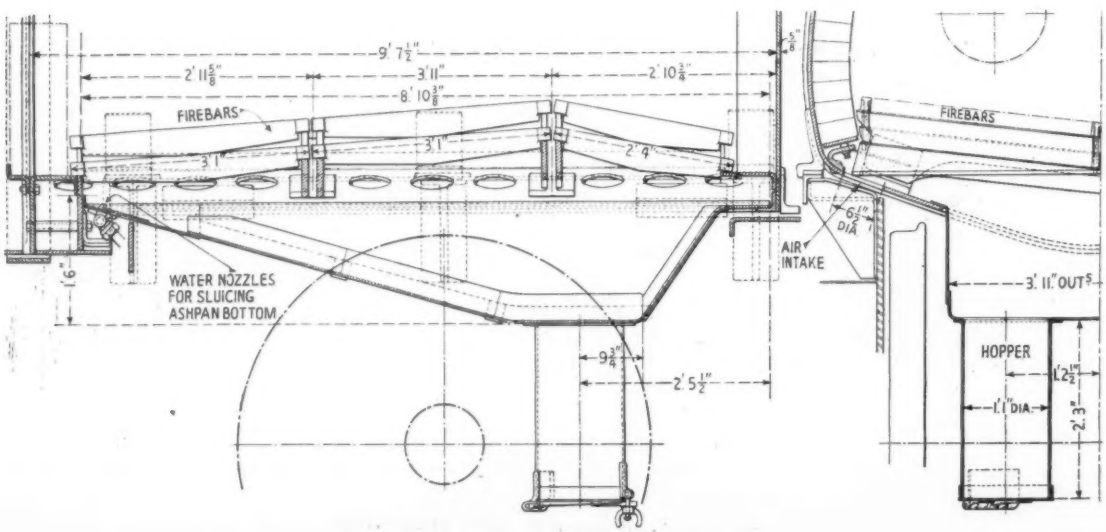



*Fig. 13—Arrangement of ashpan and firebars*

box lay-out eliminates the usually troublesome copper water space stays and the trouble which is involved in the use of narrow water legs.

The footplate amenities were excellent and the comfort and ease of manipulation by the enginemen, it was plain to be seen, had received studied consideration in the design. For instance, both injectors and their fittings were mounted on the fireman's side as also were the two sets of water gauges. The firing platform was carried from the engine and not from the tender, to add to the fireman's comfort *en route*, when firing, etc. The coal bunker on the tender was designed so as to assist the fuel to shake down to the fireman's shovelling plate. The back of the firebox and also the boiler were well lagged, and a special ventilator was provided over the footplate to add to the men's comfort and an especially good lookout was arranged so that both enginemen could see the signals equally well across the top of the boiler. The smokebox bottom was furnished with an ash hopper to ease the cleaning and emptying.

Sufficient has been said in evidence of Paget's desire to make the machine easy to work and handle efficiently by the enginemen, whose welfare was always his first consideration, and whose love for the life on the footplate was so unmistakable.

It seems sad to think that those responsible made no further endeavour to make use of this unique locomotive but as the war of 1914-1918 loomed ahead and all those who might have shown interest in the engine either joined the Railway Operating Division of the armies in France (into which Paget threw himself wholeheartedly and was its Colonel in Command) or retired, so the Paget engine lost all its friends and later was broken up.

So this is something of the story of a great man's project, for Cecil Paget was of the stuff of which great men are made, and but for a slip in the turn of fortune's wheel, was destined to, and would have played a noble part. His project, now described 36 years after its inception, was unique and original in its conception, which was of a high order, for he was no slavish copyist. Whatever he undertook was done with resolution and thoroughness and always from the highest motives. Those of us whose privilege it was to have known and served under him revere his memory but regret his untimely passing.

J. CLAYTON

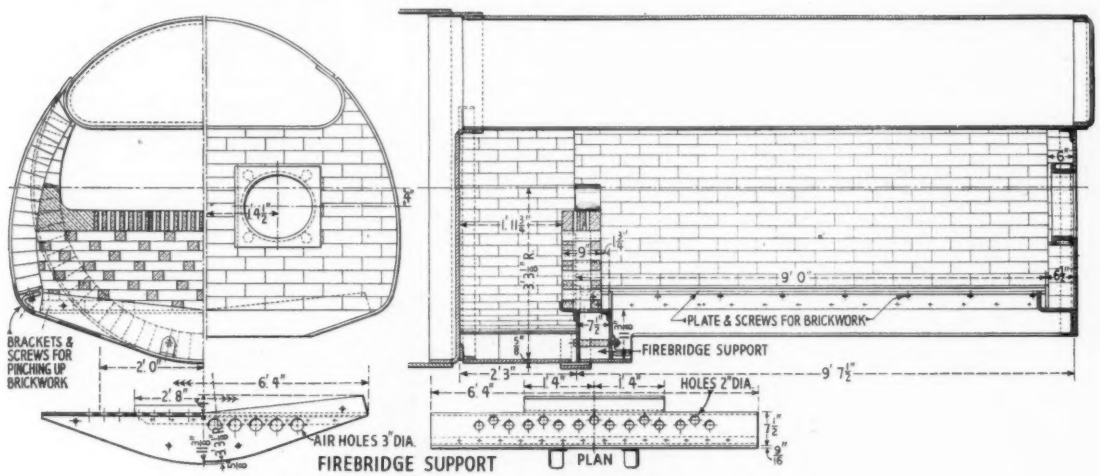



*Fig. 14—Arrangement of firebox brickwork and firebridge*

# Midland Railway 8-cylinder 2-6-2 No. 2299*

## *With a note on her designer*

*By Kenneth H. Leech, B.Sc., M.Inst.C.E.*

Very little has been published about this unique locomotive—with the possible exception of Sir Nigel Gresley's No. 10000, the most remarkable machine which has yet run on a British railway—mainly because of the deliberate "hush-hush" policy of the pundits of the old Midland Railway, but now, 35 years after the event, there is every reason to describe as fully as possible what its designer had in mind, how he proposed to do it, and why he failed.

Cecil Paget, later Sir Cecil, son of Sir Ernest Paget. the then Chairman of the Midland Railway, designed the engine during the years 1906/7. He was at that time Works Manager at the Derby Works, and about thirty years of age. A man of such organising ability, as almost to amount to genius, full of energy and fun hidden behind a "poker-face," it is not surprising that tales of his exploits and incidents in which he was involved are numerous. He was popularly supposed to have suffered more "swishings" for pranks while at Harrow than any before or since, but the story of his encounter, when an undergraduate, with his old Headmaster, Dr. Welldon, is possibly aprocryphal. "I'm Paget, sir; perhaps you don't remember me?" "Oh yes I do, Paget; but your *face* is perhaps *not* the feature I should recognise best." After passing through the usual routine of a Derby pupil, he was made an inspector of purchased material (including locomotives!). Following a short interlude of study at Cambridge, he returned to Derby, and by influence and ability soon was well on the way to a high official position, his youthful exuberance having been —partly at all events—sublimated to the hard work and the driving force so characteristic of him.

No. 2299 was a failure, though perhaps a glorious failure; and it was probably as much due to this as to the desire of the Midland directors to secure an amenable C.M.E. after their experience with the resolute Mr. Deeley, that Paget was passed over in favour of the Gas Engineer, Mr. Henry Fowler. So Paget's ability, after an extensive and intensive visit to the United States Railways, was transferred to the Traffic Department, and he became General Superintendent of the Midland Railway. In very quick time the traffic system of the railway was completely reorganised, probably a wider and more far-reaching change than had ever before been carried out on a British railway. All the other railways have since followed the lead thus set, a tribute to his work.

The course of his career was soon completely changed by the 1914-1918 war. Paget, early in 1915, went to France as Lt.-Colonel commanding the Railway Operating Division, Royal Engineers, then only a single company operating round Boulogne. In November, 1918, his command had increased to (I believe) some 25,000 officers and men, but Paget was still a Lt.-Colonel! This was due to his absolute refusal to become a General, which would have involved taking up his residence at G.H.Q. Montreuil, and would have deprived him of the mobility he so much valued, with its opportunity of always being at the critical spot at the critical moment. For he lived, with his staff, in a train, and moved from North to South, from one siding to another, as the demands on the railway service changed. To be on his staff was no sinecure; in addition to being an efficient railwayman, it was necessary also to be a first-class cook, since Paget was an epicure of epicures and himself a "cordon bleu," and furthermore to be

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able to do with very little sleep for long periods, since Paget himself never needed more than 4 hours nightly. Bedtime was usually 2 a.m., the evening as well as the day being devoted to work, and at 6 a.m., winter and summer, Paget would be up, and having run the double length of his 16-coach train in his pyjamas, would take tea into his officers and set about preparing breakfast; there were no cooks or kitchen attendants at R.O.D., G.H.Q. Having served three years under Paget in France, most of the time as a Locomotive Officer, I met him on many occasions, and on one of these I was so fortunate as to entice him to my living hut and, by the display of my own locomotive enthusiasm, stimulated him into a detailed and vivid description of 2299, accompanied by a number of sketches, now alas! lost. After an hour or more he suddenly descended to earth and, with a " Humph! that wine you gave me must have gone to my head," turned back in a second to the remote and bleak O.C., R.O.D. I believe I may say that never to anyone else did Paget " expand " on the subject of 2299, which was " taboo " on the Midland and was a very sore point with him.

He explained to me how it had been built at Derby to his private order, and that he spent all his available money on it, only to find that he required another £1,000-£2,000 to complete it; that the Midland Company finished it for him, but insisted on taking control of all tests and limiting the amount of experimental work that might prove necessary. Although Paget did not mention it I was aware that, right from the drawing-board stage, Derby had shown the utmost hostility to the new design, christening it *Paget's Mistake* or *Paget's Folly*, and that to hand over the engine to the mercies of such diehards was to destroy any chance of the locomotive's success, unless it should prove to have no teething troubles whatever; which, of course, was far from being the case.

After the war, Paget was too big a man to be acceptable to those who had remained on the Midland during the war, and so quitted railway work for good, becoming General Manager of Messrs. Steel, Peech & Tozer. I think it is fair to say that probably his constructive work in organisation had been completed before 1914, and that the post-1918 railways would not have afforded him the same degree of opportunity. He died in 1936 at the age of 62. His stocky figure, with the iron mouth and jaw, the sandy moustache and hair, and those frosty blue eyes, which could twinkle so merrily in one of his inimitable after-dinner speeches, will long be remembered by any who were brought in contact with him, as will be his habit of conducting all work by means of long and detailed telephone conversations, often lasting well over an hour and involving the making of innumerable drawings and diagrams to his meticulous instructions.

What Paget had in mind in designing 2299 was to produce an engine which should be available for any service, from heavy freight haulage at 15 m.p.h. to the highest express speeds of over 80 m.p.h., and one in which boiler cost and upkeep should be kept to a minimum. The outside elevation of No. 2299 was not by any means freakish, and very impressive 35 years ago. In essentials, the locomotive was an inside cylinder 2-6-2 tender loco. with outside frames, and a wide firebox. The firebox had no sides, front or back, leaving only the flat top below water level to be stayed to the outer casing, and the tube-plate, and eliminating some 75 per cent. of the firebox stays and all the copper. The first was kept within a firebox surround some 15 in. thick, which " reverberated " the heat so that none was wasted. The grate area was large and two fireholes were provided; the barrel was about 6 ft. in diameter.

During the trial trips that were made, I was given to understand that the boiler steamed well and gave no trouble as regards leakage, but some trouble was experienced with the firebrick walls cracking.

It was in connection with the cylinder arrangement that the revolutionary character of the design was most apparent. There were in effect four cylinders, open at both ends, and each containing two trunk-pistons of the type with which the motor car has familiarised us. Each of the three coupled axles was a crank axle, the middle axle having four cranks, the pairs each side being at 90 degrees to each other and at 180 degrees to the pair on the opposite side. The effect was that steam was admitted between each pair of pistons in each of four single-acting cylinders, and that it was exhausted by the pistons at the end of their outward stroke, uncovering ports in the cylinder barrel, in the usual " uniflow " method. The main advantage in the case of a saturated engine, apart from the unrestricted exhaust, is that the lower temperature of the exhaust steam is kept away from the steam admission port, with a reduction in the condensation of the live steam on admission to the cylinder and the consequent wastage of water. Of course, superheating also reduces this wastage, in a different way.

*Sir Cecil Paget*

From a photograph taken in the war of 1914-18

Furthermore, the balance of the reciprocating parts (except the coupling rods) was perfect, and permitted the engine to run extraordinarily smoothly—and freely—up to over 80 m.p.h., " like a spinner," as Colonel Paget put it. The only trouble that was experienced due to this cylinder layout was the inevitable small leaks past the piston-rings, which caused the engine to be more or less surrounded by a mist of steam when moving slowly. It would have been a simple matter to cure this by totally enclosing the inside motion and fitting a drain-pipe to deal with the condensed leakage. But it was the valve-gear which was the Achilles-heel of the design. Instead of the usual piston-valves, moving backwards and forwards along their axes, 2299 had a pair of rotating sleeves, driven by bevel gearing from a dummy crank-shaft which itself was driven by short coupling-rods extending rearwards from the main coupling-rods. These sleeves were, so Paget informed me, made of phosphor-bronze (not cast iron, as quoted by Ahrons), and were not complete Os, but were split lengthways to form Cs, the slot forming the steam-port, boiler steam being admitted inside the sleeve as the regulator was opened. The snag here was that the phosphor-bronze of the sleeve expanded more than the cast iron of the tunnel in which it rotated, and although the slot permitted the necessary expansion to take place, the pressure caused by the expansion, added to the internal steam pressure, and the centrifugal force when the locomotive was running fast, caused the lubrication to fail and the sleeve to seize up. As first built, the sleeve was turned to such a diameter as to fit the tunnel at the temperature of boiler steam, but this blew through to exhaust rather badly until the engine was thoroughly warmed up. The next step was to make a bigger sleeve, to fit the tunnel when cold, but this seized up even when moving slowly. So that finally, the sleeve was reduced to be a clearance when hot and stationary, the steam pressure and centrifugal force being relied on to make a seal when running. Most of the test runs were made in this condition and, as quoted by Ahrons, 82 m.p.h. was reached with ease with a fully loaded train on the level.

But one unlucky Sunday, 2299 was doing about 70 m.p.h. through Syston when the whole sleeve assembly seized up solid and wrecked itself and the cylinders completely. The line was blocked for 7 or 8 hours until the parts could be moved sufficiently to allow the engine to be towed; and the fiat went forth—" No more trials."*

No. 2299 stayed for some years in a very quiet part of the paint shop, whence visitors were rigidly excluded, until about 1915, when she was scrapped. I myself saw her there in 1913, and spent a long time under and over her, while the paint shop foreman was decoyed away to the far end of the shop by my guide.

The middle crank axle, with its four cranks, was a remarkable example of the blacksmith's art, but it looked a thoroughly sound design, and the cranks were only 6-in. throw. The connecting rods were only about 3 ft. 6 in. long and could be easily lifted by one man; very different from those of the Tilbury " Baltics."

Reversing was managed by arranging a differential gear in the shaft driving the

* We understand on good authority that this recollection is not quite correct. After running to the junction south of Leicester, the engine would not start with her train as the wheels were binding on the curve, the valves were not steam-tight, and steam was escaping through to the exhaust. No delay was caused to traffic as the train was off the main line. A shunting engine was used to draw the train back to Derby; and that was where the trouble began, because the cylinders got hot due to the pistons working back and forth without steam, and in some places cracked, as they had to be " laced " afterwards. She went out for further trials on many occasions.—ED. *R.G.*

rotary valves. One of the bevel wheels in this differential was held from rotating, the driving and driven bevels rotating around it. To reverse, this fixed wheel was turned through 180 degrees and held in the new position, the driven wheel thus being rotated also through 180 degrees and timing the engine valves for backward running.

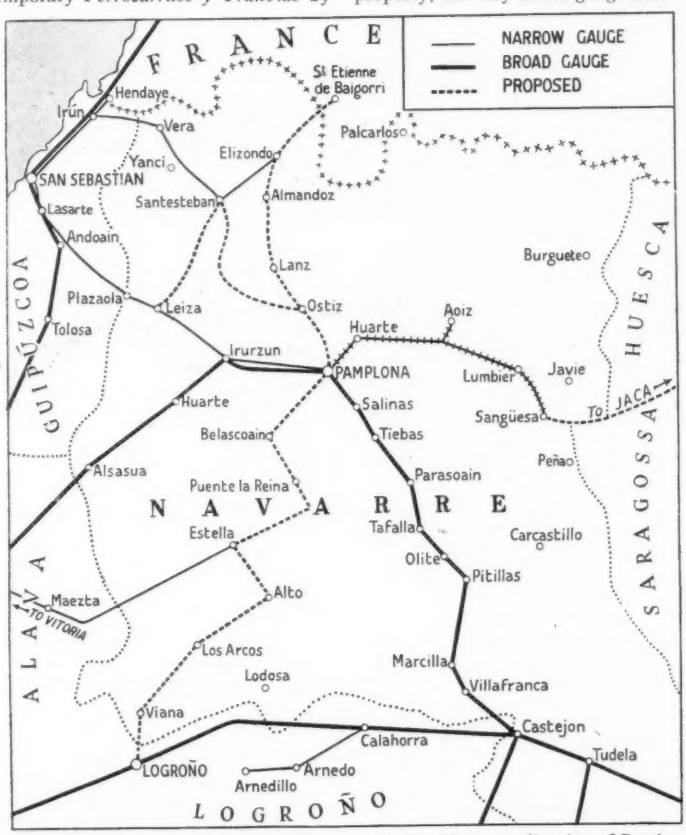
The cut-off was altered by providing inside the rotary valve tunnel a thin liner (in which the valves rotated) which could itself be partially rotated. This liner was slotted lengthwise to form the steam ports, and the cut-off was altered as the rotary valve slot passed earlier or later over the liner slots according to the angular position in which the liner was held.

It must be understood that although the foregoing gives a correct general idea of the valve-gear, I have never seen the working drawings or the actual parts. There are several ways in which the details of the mechanism might be laid out, and Paget's sketches of these details were very rough. He seemed more concerned at the time to hear my views of the best metals to use for the liners and valves, and I remember that my suggestion was to use cast iron for both parts and eliminate the differential expansion. In the light of nearly 25 years more engineering experience (mostly bitter) I doubt whether anything except a radical redesign of the rotary valve would be satisfactory. A possible solution would be to use 2, 3 or 4 segmental valves instead of one C valve, and rotate them at half engine speed, or slower as required; thus giving the lubrication a better chance, and further helping things by the slow speed rotation. Nevertheless, especially with superheated steam, I should want to make a lot of tests before committing myself to a production design!

But the valve-gear, though important, was not a fundamental point of the design. The cylinders might have been modified to use four piston-valves, one for each cylinder, either cam-operated, or actuated by an ordinary valve-gear. The cheap and simple boiler, and the perfectly balanced, free-running engine would have remained, and the development of the British locomotive might have taken a different course thereafter—but I was forgetting the Derby die-hards!

# The Narrow-Gauge Railways of Navarre

THE fortunes and future of the narrow-(metre) gauge lines in the Spanish province of Navarra (Navarre) have been attracting attention, and some notes on the subject have been published in our contemporary *Ferrocarriles y Tranvias* by the Assistant Manager of the Bidasoa lines, Señor Emilio Tobalina. The commercial situation in the province is such that a desire to see new lines constructed is frequently expressed. It is considered that the position cannot be met adequately by motor services and that improved rail communications are essential to a satisfactory development of the resources of the province, which are appreciable. In Señor Tobalina's view the question is one of national importance and should be dealt with on far-seeing lines by the State, or at least by the provincial authorities. The lines now existing are shown on the accompanying map. The Vitoria-Estella route, is not considered, as it is not private property, nor any broad-gauge lines.




***Existing and proposed railway routes in the Navarre district of Spain***

A railway was in existence for some years, built to serve mineral and timber interests, from Andoain to Plazaola, on the border of the province of Guipúzcoa. It was practically bankrupt, but encouraged by legislation passed with the object of improving the private railways, where possible, a proposal was brought forward to extend it from Andoain to Lasarte—only 7 km. (4·4 miles) and from Plazaola to Pamplona, 56 km. (35 miles). Another proposal, advanced by a public official, was for a line from Irún through Santesteban to Pamplona, with a branch from Santesteban to Elizondo. Both were examined by the military authorities, who were unfavourable to the Irún-Elizondo scheme. The government agreed to both schemes.

The Plazaola line was completed; trains start from San Sebastian and reach Lasarte over the tracks of the Vascongados line, use their own to Andoain, the original track thence to Plazaola and their own again to Pamplona. The total distance worked by the Company for Operating Railways and Tramways is 80 km. (50 miles).

The Irati Railway, from Pamplona to Sangüesa, which serves mines and distilleries, is worked electrically. It carries a substantial passenger traffic. The Bidasoa line was constructed from Irún to Santesteban and Elizondo, but the section from Santesteban to Pamplona was never made, because of the economic difficulties arising from the 1914 war. As the concession was not fully carried out, the State guarantee of interest was forfeited. Although a profit is now being made, for many years the line was worked at a loss. The proprietors had more than one large scale plan in view. One proposal was to extend from Elizondo across the frontier to St. Etienne de Baigorri in France, about 12 km. (7½ miles), but nothing has come of it yet. Another project proposed to connect both Elizondo and Santesteban with Pamplona, but financial difficulties prevented it from being entered on. An extension of the Pamplona-Sangüesa line to Jaca, in the province of Huesca, in Aragón, has often been suggested.

The most important, however, of the projected routes, discussed for many years, is the one connecting Pamplona with Logroño and following a zig-zag course so as to serve the principal places in the district. It has even been suggested that it ought to be a standard- (Spanish) gauge line, and there have been proposals for the former Norte Company to undertake the construction. It does not appear that, in spite of the fact that there is a real need to improve rail communication in the province, there will be any serious steps taken in this direction unless the public authorities concerned, municipal and provincial, develop a comprehensive plan and give it the necessary support. Such lines as are open are operating under difficulty, but this is partly the result, it would seem, of the incomplete nature of the system generally. At Pamplona the "Renfe" station is at an inconvenient distance from the town, but plans for removing it to a better site are well advanced.

# Grouting Soft Spots in Track

***The New York Central System is improving its main lines by systematic pressure grouting between the ballast and the formation at soft places***

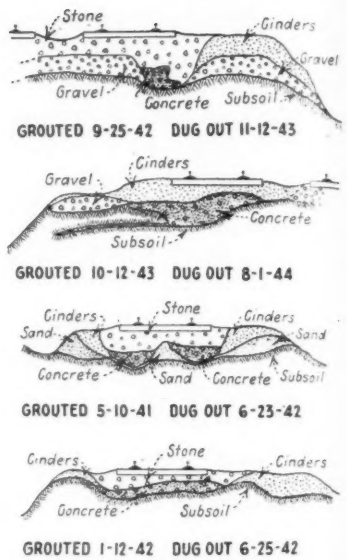
CONSIDERABLE economies in maintenance are being effected on the New York Central System by the pressure grouting of soft spots in main-line tracks. At different points on most railways, water-holding depressions in the track formation, into which the ballast is driven by the pressure of the traffic, cause soft spots that give constant trouble, either causing rough riding of trains, or, in bad cases, making necessary the imposition of a permanent speed restriction. The principle of roadbed grouting is to pump a cement-sand grout down to the formation, so as to seal off these depressions, and thus both to prevent moisture from reaching the unstable subsoil, and also to form a concrete formation which will help to distribute the load more widely over the softened area.

To date, all the New York Central roadbed grouting has been done on the lines west of Buffalo, and by the beginning of this year, 197 soft spots had been dealt with, having a total length of 7 miles. Records show that whereas the total cost in 1942 of grouting 31 soft spots was only $4,300 (£860), in the next year the saving in maintenance at these points amounted to more than $13,000—thus both repaying the original investment and gaining more than 200 per cent. profit in a single year. The work, and the cost is now averaging about $1.50 per ft. of track.

### Method employed

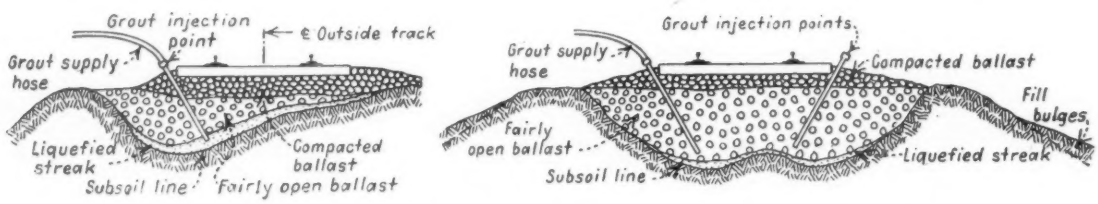
The grout used is a half-and-half mixture of cement and screened sand, with enough water to give it a soapy consistency; this sets into a solid mass able to withstand about 2,500 lb. per sq. in. pressure without disintegration. The equipment required includes an air compressor, with a rated capacity of 60 cu. ft. of air per min. at a pressure of 100 lb. per sq. in.; a combined grout mixing and pressure tank; a considerable number of 1½-in. iron injection pipes from 3 ft. to 5 ft. long; a ratchet appliance for withdrawing them after use; and such auxiliary equipment as sandbox, water barrels, water tank, and hose for delivering the grout. The crew needed is from four to six men, with a foreman.

Normally, the pipes are spaced 5 ft. apart, lengthwise of the track, and are driven into the ballast from a point about 12 in. off the ends of the sleepers, at an angle of 30 deg., so that when the driving is stopped, the lower ends of the pipes are under the rails. If the soft spot is at a lower depth than normal, the injection pipe is driven more nearly vertical. The purpose is to drive in the grout at a point as nearly as possible under that part of the ballast sustaining the heaviest




***Cross-sections showing how the concrete formations seal off the soft subsoil and help to spread the load over it***

plug at the lower end of the pipe is forced out by a ramrod. Water is first driven through the pipes, at a pressure of 40 lb. per sq. in., to flush fine clay away from the pipe and to prepare for the free entry of the grout, and the grout follows until the pocket is filled. No speed reduction is found to be necessary over the affected track while the grouting is in progress. Grouting the 36,379 ft. of track that had been tackled by the New York Central in four years has cost $54,750, and already the aggregate annual savings amount to $85,880. This sum is more than 150 per cent. per annum on the original investment.




***Cross-sections showing location of injection pipes for grouting different types of soft spots***

aggregate annual savings resulting from grouting on the New York Central lines west of Buffalo amounted to $43,400 in 1944. Two soft spots east of Lythmore, Ontario, which had cost an average of $249 monthly to maintain, were grouted at a total cost of $301, and as a result the monthly maintenance cost was brought down to less than $18. Sixteen grouting gangs are now engaged on this pressure. The introduction of grout is continued until the track can take no more, and is stopped if, as sometimes occurs, the grout breaks through at the ballast toe line, or comes up through the ballast to the surface.

The depth to which the pipes are driven is determined by the resistance to the driving. When resistance is felt to reduce, the driving is stopped, and the

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RAILWAY AIR SERVICES TO NORTHERN IRELAND.—Railway Air Services has been experimenting on various routes with the Avro XIX, the civil version of the Anson which has performed such useful service with the R.A.F. during the war. This 7-9-seater low-wing monoplane, cruising at 155 m.p.h., has a high standard of passenger comfort and has given satisfaction to the passengers who have had an opportunity of travelling in it during the past few weeks.

On conclusion of the experiments, Railway Air Services placed an order for a number of these aircraft for operation on its longer distance routes pending the delivery of larger and faster aircraft now in production.

The delivery of the new Avro XIXs is expected early in November, and they will immediately be placed into service on the London/Belfast and Glasgow/Belfast routes. As a part of the plans for speeding up, it is proposed to operate a direct service between London and Belfast in a little over two hours. Detailed schedules are in course of preparation and will be published shortly.

Railway Air Services emphasises that it is taking the opportunity of giving the public additional comfort and speed by placing orders for the first post-war British aircraft available, developed exclusively for civil aviation purposes. It intends to operate its long distance services, including London/Belfast and London/Glasgow, with 21-seater Vickers Viking aeroplanes immediately these are delivered, and it is hoped that the first aircraft of this type will be available for operation on the internal routes early in the New Year. This 21-seater aircraft will be a great advance, both in speed and comfort, on any aircraft previously operated over internal routes in this country.

Railway Air Services has, from the start, been closely associated with Vickers Armstrong Limited in the design and details of the interior lay-out of the Viking.

# New Train Ferry Malmö-Copenhagen Route

## *A luxurious Swedish motorship now in service*

On October 1 a new train-ferry of 3,000 tons displacement, the motorship *Malmöhus*, was put into service by the Swedish State Railways on the route between Malmö and the Danish capital. The vessel, which was delivered by the Kockum Shipyard of Malmö, at the end of September, is claimed to be the most modern of its kind.

The *Malmöhus* has an overall length of 309 ft. and a breadth of 52·5 ft. She has five decks. The hull is all-welded and divided into nine watertight compartments. The hull and superstructure are streamlined, and the whole appearance of the vessel is unusually symmetrical and attractive.

Powerful machinery consisting of two eight-cylinder Kockum-M.A.N. diesel engines, developing together 5,800 i.h.p., makes it possible to cover the 18 nautical miles between Malmö and Copenhagen in about 80 minutes. The speed in deep water is calculated at 15 knots, but in deeper water can be brought up to 16 or 17 knots.

The twin-screws are of stainless steel, and the propeller shafts are equipped with S.K.F. roller bearings. The strong hull, with its icebreaking stem and stern in combination with the high engine power, will make the ship well suited to cope with the very difficult ice conditions which often arise in the Copenhagen Sound.

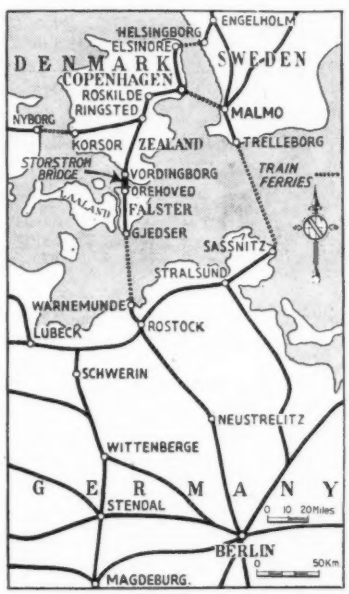
Electrification on board is complete. Windlass, steering gear, heating arrangements, etc., are all electrically operated and the power is supplied by three six-cylinder 380-h.p. diesel engines.

The railway track on board has a total length of 535 ft., and the rail deck is strong enough to make possible the taking on board of wagons with up to 25 tons axle load. The wagons enter and leave the vessel through a gate in the stern and the ship will, therefore, have to turn and back into the ferry station. The loss of time through these manœuvres is, however, more than compensated for by the higher speed obtained through an ordinary bow and stern design being embodied in the hull.

The equipment of the vessel is up to date in every respect. The navigational equipment—which is all of Swedish make—includes an echo-sounding instrument, which makes it possible to locate other ships and land contours even in a fog and within a distance of 15 km.: there are under-water signalling apparatus, gyro compass, radio-telephone, and a loud-speaker installation throughout the ship.

Comfortable accommodation has been provided for 1,800 passengers. In addition to the spacious promenade decks, the passengers have at their disposal a large dining room, two bars, a lounge and a saloon for non-smokers, all equipped with modern Swedish furniture and big windows affording a fine view of the sea. For passengers who desire to stay over-night on board, there are a number of comfortable cabins. Moreover, the passengers have at their disposal a radio-telephone service, by which they can get into contact with any place in Sweden or Denmark.

The *Malmöhus* was laid down in the beginning of 1943 and was launched in October of the same year. The ship, which cost 6 million kronor (£360,000) replaces the old train-ferry on the Malmö-Copenhagen route, the *Malmö*, which has been in service since 1900. This ship, which in the future will be used as a stand-by only, has a displacement of only 1,600 tons and a power of 1,800 h.p., compared with 3,000 tons and 5,800 h.p. respectively of the new ferry. With the increasing traffic on this route—before the war 250,000 passengers and about 100,000 tons of goods were forwarded annually—there has been a great demand for a ferry with a larger capacity, and the *Malmöhus* will therefore fill a great demand.




*Sketch map showing the position of the Malmö-Copenhagen ferry route*

The *Malmöhus*, which has been named after the mediæval castle in Malmö of the same name, has been designed by the chief engineer of the Kockum Shipyard, Kurt Söderlund, while the architect of the Swedish State Railways, Birger Jonson, is the designer of the passenger quarters.

The Swedish State Railways have at present at their disposal five train-ferries. In addition to the two already mentioned, there are the steam ferries, *Drottning*, *Victoria*, and *Knung Gustef V* of 3,300 gross tons, and the ice-breaking ferry *Starke* of 2,950 tons, all normally operating on the Trelleborg-Sessnitz line. In addition, the State Railways own a few passenger vessels, which supplement the train-ferry traffic between Malmö and Copenhagen.

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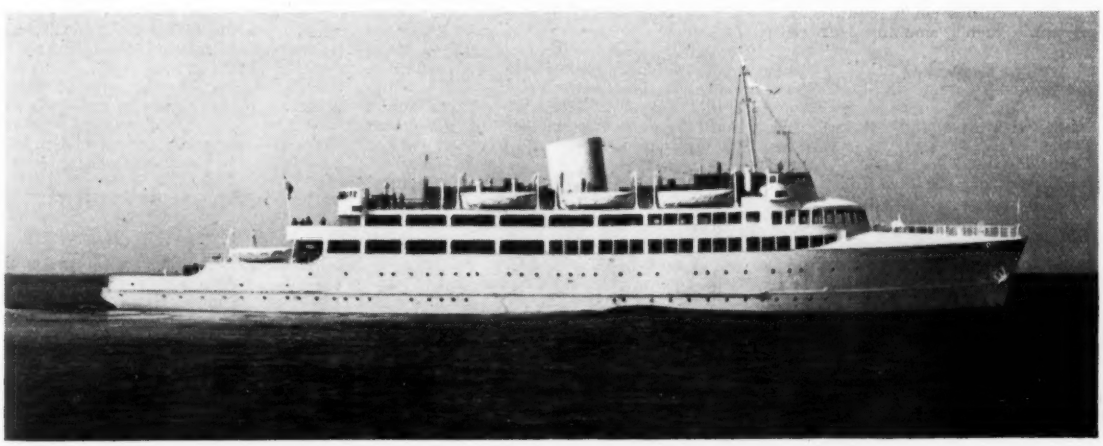
L.N.E.R. Harwich-Hook Service Resumption.—The London & North Eastern Railway steamship service between Harwich (Parkeston Quay) and the Hook of Holland will be restored on November 14; sailings to Holland will be on Mondays, Wednesdays, and Fridays, and from Holland on Tuesdays, Thursdays, and Saturdays.

The service will be maintained by the s.s. *Prague* The Hook-Continental express will run between Liverpool Street and Parkeston Quay in conjunction with the arrival and departure of the steamer. In Holland a through train will operate between the Hook of Holland and The Hague, Rotterdam, and Amsterdam. The train from Liverpool Street Station will leave at 8 p.m. and the steamer will arrive at the Hook the following morning at 7 o'clock G.M.T. (8 a.m. Dutch time). In the reverse direction the steamer will leave the Hook of Holland at 10.15 p.m. (Dutch time) and the arrival time at Liverpool Street will be 9 a.m.



*Swedish train-ferry motorship "Malmöhus" crossing the Sound between Malmö and Copenhagen*

# United States Passenger Coach Designs

## *Comfort and simplicity are features of the American Car & Foundry Company's programme*

THE American Car & Foundry Company has drawn up designs for a coach which it is designing for overnight travel and which it plans to put into production. The designs provide luxurious accommodation for passengers with features not previously encountered in railway travel.

In preparing for post-war conditions it is the belief of the American Car & Foundry Company that the basic necessity is to build low-cost per mile passenger transport in so attractive and luxurious a form that the railways themselves would have no problem in reselling that transport to the public. All available space has been studied and used to greatest advantage of both railway and passenger.

Improvements in the design of washrooms for men and women offer greater facilities and a high degree of sanitation. Additional folding washstands in the men's room to take care of the morning rush, when not in use, fold back into the wall and a comfortable couch to seat four passengers comes into place. Armrests on the couch may be folded back to provide a full-length sofa in case of illness. The purpose of the dual arrangement is to provide additional and ample toilet facilities when required, and a comfortable men's smoking lounge by day.

The vanity room has three vanity tables arranged in semi-circular fashion, which accommodate three ladies at the same time with ease and comfort. By lifting the table tops of the vanities, three individual wash basins appear. These automatically drain as the lids are closed again. Inset are tissue and soap dispensers, and wing mirrors. Underneath the vanity is a waste receptacle for disposal of towels and tissues. All plumbing is concealed and completely sanitised; corners are coved for easier cleaning.

Functional curtains and "dayflector" windows of the coach are unique in their arrangement. In the upper third of the window, between the inner and outer glass, curved, highly-polished stainless-steel slats are inserted; these have the purpose of catching the daylight and relaying it to the underside of the baggage rack, making the latter a diffusing reflector for indirect light. The curtains work on a curtain runner and each covers half a window, so that it is possible for two passengers seated at one window to suit their individual tastes of either excluding the light or of observing the passing scenery.

Low-level boarding of the coach will be made easier by the carefully designed shallow steps and handrails. Passage through the vestibule has been safeguarded by swinging handrails that latch into position longitudinally of the coach from the body door sides, or against the coach body wall when passengers are leaving or boarding the coach. The doors between cars are mechanically operated and by means of three round windows give full-length vision into the vestibules. Curving side walls of the ladies' and men's rooms do away with harsh angles and allow greater facility of movement through passageways and between cars.

A new type of baggage rack, fully enclosed, and which is to be a structural part of the coach body, has covers for easy cleaning. Luggage lockers are made more readily accessible through the condensed arrangement of the men's and women's washrooms which has eliminated long passageways and permits unloading of luggage to be expedited.

Other special features of the proposed coach are a snack bar in the diner, semi-circular in arrangement, with mirror shelves for the display of food. The diner is divided into sections by glass bulkheads that give the impression of a succession of rooms and allow a clear unobstructed view throughout the car. A small ante-room serves as a cocktail corner. Throughout the diner everything is streamline for quick, clean and ultra-modern service.

A junior-room, which was illustrated on page 377 of our October 12 issue, to accommodate mother and child, is equipped with folding cot and railing for protection. The cot may be folded back into the wall and converted into a seat for two adults. A vanity converts easily into a wash basin with mirror above; a folding table, chair and telephone complete the setting. When not in use as a junior room, it can be used as a private saloon.

Another arrangement in the design is the service car with its beauty salon, barber, telephone, and stenographic service. An observation lounge is also incorporated, with individual and movable armchairs arranged on platforms slightly raised above the centre aisle and separated from the aisle by handrails, to aid passengers in moving towards the semi-circular bay at the end. Horizontal flanges on the exterior, around the wide windows, although an integral part of the structure, will give a rich decorative effect and serve to deflect the light and to diffuse it, without glare, into the coach.

***Men's lounge by day. The couch folds out and reveals four wash basins. Alternatively the armrests may be folded back to make a full-length couch***

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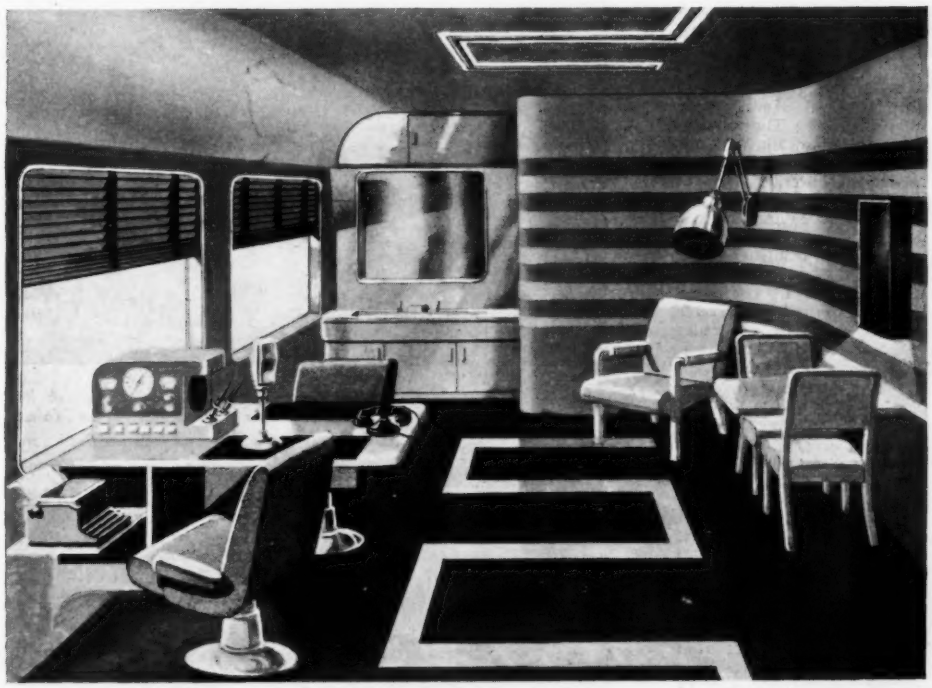
RELEASE OF STORAGE PREMISES.—The Board of Trade announces that the return of premises requisitioned during the war for storage is to be accelerated. To September 30, 1945, about 138 million sq. ft. of industrial floor space was still held by Government departments; about 12 million sq. ft. has been released to industry; and a further 12 million sq. ft. is in process of being released. The aim of the Government is to ensure the release of the remaining factory accommodation by the end of 1946, and storage and disposal departments have been instructed that where stores have to be retained they must be removed from factory space.

SCREW THREADS OF WHITWORTH FORM.—In the 1940 issue of British Standards 84, "Screw Threads of Whitworth Form," some preliminary recommendations were made in respect of the amounts of reduction of the nominal major diameter of bolts when the deliberate intention was to produce bolts with flat crests, commonly known as "truncated threads." Since the 1940 issue, a more detailed study has been made of the most suitable amounts of truncation and of the appropriate tolerances on such flat crested bolts, and new standards, superseding the recommendations of the 1940 edition, have been published as Amendment No. 3 to B.S. 84. Copies of this amendment may be obtained from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 1s., post free.

# United States Passenger Coach Designs

(*See article on opposite page*)



*The service car offers beauty care, a barber, and stenographic service. Radio and a public address system are installed*

*Observation lounge with high percentage of visibility. Chairs at each side are on raised platforms to enable occupants to look over the heads of passengers in the rear seat*

# Soviet Railwaymen's Day Celebrations in Moscow

THE story of the services rendered by Soviet railwaymen to their country and the Allied cause since 1941 has been recorded periodically in our columns, and their efforts and achievements were ably summarised by Engineer S. Alterman, of the U.S.S.R. Railways, in our July 28, 1944, issue, and by Prof. Dr. T. S. Khachaturov in our March 16, 1945, issue. The railwaymen worked in close collaboration with the Red Army. It has been recognised that the success which attended the endeavours of the railway staff was due largely to the initiative and ability of the leading workers, who devised new methods of operation to overcome the exceptional conditions and demand for extra transport which arose after the declaration of war by Germany, and the leaders were supported by valuable proposals which were made by all grades employed in traffic operation and the construction and maintenance of the engineering works.

The unprecedented scale of the military operations of the Red Army, and its outstanding strategical successes, would have been impossible of accomplishment without the wartime construction of new lines in record time, and these were of extensive mileage. An estimate of the task which confronted the Soviet railwaymen can be envisaged from the fact that they had to restore over 20,000 miles of track which had been destroyed by the Germans.

The work of the railwaymen was accorded national approval and the Soviet people named them, "brothers of the gallant Red Army," and 127 of them received the highest award of the country, the title of Hero of Socialist Labour.

Recently a Railwaymen's Day was held in Moscow on August 5, at which this national recognition took tangible form in open-air celebrations. Three of the events are illustrated. The second view is of an interesting exhibit of a model of a Soviet 2-10-2 locomotive which was set up in one of the lanes in the Gorky Park of Culture & Rest; diagrams and placards on the sides of the model describe the work of the railwaymen during the war; the first illustration shows a concert being conducted in the Green open-air theatre; and the third is of a group of leaders at the Chairman's table at a meeting of Heroes of Socialist Labour.

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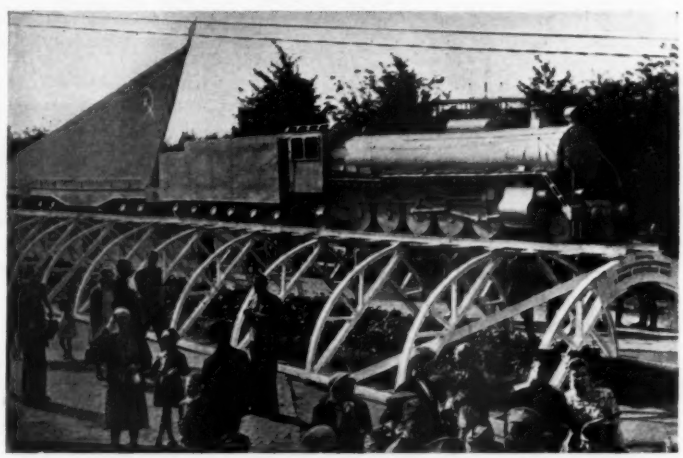
FORM OF APPLICATION FOR EXPORT LICENCE.—The Board of Trade announces that a simplified form of application for export licence will be brought into use as soon as supplies can be printed, and that this revised form will call for considerably less information than that necessary during the war years. Pending its introduction, exporters completing the present application form need no longer answer questions 6, 7, 8, 9, 10, 12, 13, 14, 15. Further, on page 3 the country of destination only need be given. Thus, among other matters, the names, of the ultimate purchaser abroad, the forwarding agent at the port of discharge and the agent need not be stated. The Board of Trade reminds exporters that it is an offence to consign goods to a person included in the current Trading with the Enemy (Specified Persons) Orders, or to any territory to which regulation 7 of the Defence (Trading with the Enemy) Regulations applies (these territories at present include Germany, Japan, Roumania, Hungary, Bulgaria and Siam); and that any goods sent forward for export and so consigned will be stopped by the Officers of Customs & Excise.

*A concert in the Green Theatre in the Gorky Park of Culture & Rest was a feature of the Soviet Railwaymen's Day celebrations in Moscow*



*Model 2-10-2 locomotive in Gorky Park of Culture & Rest. Diagrams and posters on the sides of the locomotive and wagons describe the war work of Soviet railwaymen*

*Meeting of Heroes of Socialist Labour. Leaders at Chairman's table. Right to left: Vasili Osipov, Ivan Panin, Ivan Yatskov, Lazar Kaganovich (Vice-Chairman of the Council of People's Commissars of the U.S.S.R.), Georgi Popov (Chairman of the Executive Committee of the Moscow Soviet of Working People's Deputies), Lt.-General Ivan Kovalyov (People's Commissar of Railways of the U.S.S.R.)*

# RAILWAY NEWS SECTION

## PERSONAL

The directors of the Southern Railway Company announce that the Rt. Hon. Lord Ebbisham, G.B.E., who consented to continue his membership of the board of the company until the cessation of hostilities, has tendered his resignation, which has been accepted with much regret. Mr. Herbert William Corry also has resigned his seat on the board, on account of ill health. To fill the vacancies thus created, the directors have co-opted to the board the Rt. Hon. Henry Urmston Willink, K.C., M.P., and the Rt. Hon. Sir John Anderson, G.C.B., G.C.S.I., G.C.I.E., M.P.

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The Rt. Hon. Lord Burghley, K.C.M.G., has been appointed a Director of the London & North Eastern Railway Company, to fill the vacancy on the board created by the death of Sir Gerald Francis Talbot. Lord Burghley was a Director of the L.N.E.R. from May, 1934, to October, 1943, when he resigned in consequence of his appointment as Governor & Commander-in-Chief of Bermuda.

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The Directors of the Buenos Ayres Great Southern Railway Co. Ltd. and the Buenos Ayres Western Railway Limited announce that Sir Sam Fay, on account of his advanced years, has resigned his seat on the boards of the companies.

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Lt.-Colonel R. P. W. Adeane has been appointed Chairman of the Midland Railway Co. of Western Australia Ltd., in succession to Mr. W. S. Poole, who has resigned from the board.

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Mr. R. W. McMurray, Managing Director of Canadian Pacific Steamships Limited, has arrived in England on a visit to examine the possibility of re-establishing the company's Atlantic and Pacific services as early as possible in existing conditions.

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We regret to record the death on October 1, in his 78th year, of Mr. Edgar William Timmis, head of the firm of I. A. Timmis & Son, consulting civil engineers. He was the eldest son of the late Mr. Illius Augustus Timmis, whom he succeeded, on his death, as head of the firm. In co-operation with his father, he worked on the design of springs for railway rolling stock. He also was the inventor of several devices for the improved running of railway vehicles. At a later date he interested himself in the development of railway automatic electric signalling.

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INDIAN RAILWAY STAFF CHANGES

Sir Lakshmipati Misra, Member, Engineering & Reconstruction, Railway Board, proceeded on leave, preparatory to retirement, on October 17. Dr. H. J. Nichols, lately General Manager, B.B.C.I.R., has been appointed to officiate in his place.

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We regret to record the death on October 27, in his 80th year, of Mr. George Hughes, C.B.E., M.I.Mech.E., who was Chief Mechanical & Electrical Engineer, L.M.S.R., from 1923 until his retirement in 1925. He had held a similar position with the L.N.W.R. since January 1, 1922, before which he had been Chief Mechanical Engineer, Lancashire & Yorkshire Railway, since 1904.

Mr. N. McK. Jesper, O.B.E., D.S.O., M.C., who, as recorded in our July 13 issue, has been appointed Chief of Police (Southern Area), L.N.E.R., joined the N.E.R. in January, 1915. Shortly afterwards he joined H.M. Forces, and was in France until 1919, and won the M.C. He returned to railway service, and, after holding various positions, was appointed Yardmaster & Staithes Superintendent, Dunston, in 1934. On the outbreak of war in 1939, Mr. Jesper went to France. He was among the last to leave the beaches at Dunkirk, and for his work during the embarking of troops and wounded there he was awarded the D.S.O. He later went to Greece with the advance party, where he stayed to arrange the subsequent evacuation. He eventually commanded No. 1 Railway (Home) Group, R.E., before being demobilised last June, with the rank of Colonel.

*Mr. N. McK. Jesper*
Appointed Chief of Police (Southern Area), L.N.E.R.

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The Peruvian Corporation Limited announces that the Hon. B. Pleydell Bouverie has been elected a Director.

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We regret to record the death, in an accident, on October 24, of Mr. Thomas Greenwood, a Director of Greenwood & Batley Limited.

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Lord Colwyn has resigned from the board of the Dunlop Rubber Co. Ltd., and the Hon. David Bowes Lyon has been appointed a Director.

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Mr. F. D. Arney, Assistant General Manager, Port of Bristol, has been appointed General Manager, in succession to Mr. R. H. Jones, whose retirement was recorded in our October 12 issue.

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We regret to record the death on October 29, in her 90th year, of Mrs. Mary Elizabeth Worsdell, widow of Mr. Wilson Worsdell, Chief Mechanical Engineer, North Eastern Railway, 1890-1910, who died in 1920.

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Mr. G. W. Lacey, who, as recorded in our October 12 issue, has rejoined the British Aluminium Co. Ltd., after being Controller of Light Metals, Ministry of Aircraft Production, has been appointed General Sales Manager of the company. Mr. G. A. Anderson, who has been Deputy-Controller of Light Metals, is appointed Deputy General Sales Manager. Mr. E. A. Langham has been appointed Sales Manager of the company, Mr. A. W. Langham, Sales Planning Manager, and Mr. H. H. Cundell, Development Manager.

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Consequent on the retirement of Mr. J. W. Forrest from the position of Assistant Secretary, New South Wales Government Railways, the Commissioner for Railways has approved of the appointment, as from August 1, 1945, of Mr. W. A. Anderson as Administrative Assistant, and Mr. A. J. McAndrew as Public Relations Officer, *vice* Mr. Anderson.

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In accordance with the new constitution of the British Iron & Steel Federation, the Light Rolled Steel Products Conference has adopted a constitution and appointed as first Chairman (for 1945) Mr. Andrew Jollie, of Steel, Peech & Tozer Limited. Mr. G. H. Latham, Chairman of the Whitehead Iron & Steel Co. Ltd., is appointed Deputy-Chairman of the conference. Mr. Latham will succeed Mr. Jollie as Chairman of the conference in 1946, and Mr. John R. Hope, of the Lancashire Steel Corporation Limited, will be Deputy Chairman.

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Mr. John McNeil, District Superintendent, Glasgow, L.N.E.R., retired on October 31 after 50 years' railway service.

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Sir Ashley Sparks, who, throughout the war, has placed his services at the disposal of the Ministry of War Transport in the United Kingdom as representative of the Minister in the U.S.A., and who acted in a similar capacity in the last war, has requested that he may be allowed to relinquish these responsibilities. The Minister, in agreeing to Sir Ashley Sparks's request, has expressed to him high appreciation of the exceptional services which he has rendered. Mr. William Boyd, who acted as Senior Deputy Representative for the whole war period, and who was also Deputy Director-General of the British Ministry of Shipping in New York in the war of 1914-18, has been appointed to succeed Sir Ashley Sparks, with effect from October 22.

XUM

Mr. Christopher Edward Spurgeon, C.B.E., M.I.Mech.E., Deputy General Manager of the Egyptian State Railways, who, as recorded in our August 17 issue, has been appointed Chief Inspecting Engineer in London to the Egyptian Government, was born in 1879, and gained his early locomotive and engineering experience at Swindon, G.W.R., and University College, London. In 1904 he was appointed an Assistant Locomotive Superintendent on the North Western Railway, India. He was promoted to District Locomotive Superintendent in 1911, and, after varied experience in the design, layout, and construction of locomotive repair shops, and oil-fired locomotives, and in charge of various districts, was promoted to officiate as Deputy Chief Mechanical Engineer. In 1922 he was put in charge of the workshops and later was appointed Superintendent, Mechanical Workshops, N.W.R. In 1928 Mr. Spurgeon was appointed to officiate as Chief Mechanical Engineer of that railway, was confirmed in that post in 1929, and retired from service in India with that rank in May, 1934. In November of the same year he was appointed Chief Mechanical Engineer, Egyptian State Railways, of which he became Deputy General Manager in 1937. In 1940 the Second Order of the Nile and in 1943 the C.B.E. were conferred on Mr. Spurgeon in recognition of his services on the Egyptian State Railways during the war.

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Mr. S. B. Taylor, B.Com., F.C.I.S., A.M.Inst.T., Acting Assistant Secretary, Paddington, Great Western Railway, who, as recorded in our October 5 issue, has been appointed Joint Assistant Secretary, entered the company's service in 1915 in the Registration Office at Paddington. In 1921 he became a member of the Secretary's personal staff, attaining the position of Chief Clerk in 1934. His promotion to the post of Assistant to the Secretary came in 1939, and early this year he was appointed Acting Assistant Secretary. He has also held the position of Secretary of the London Midland & Scottish and Great Western Railways Joint Committee since 1937. Mr. Taylor is a Bachelor of Commerce of the University of London

*Mr. C. E. Spurgeon*

Appointed Chief Inspecting Engineer in London to the Egyptian Government

and, in 1928, was awarded by the University the Sir Ernest Cassel travelling scholarship, which enabled him to study at Columbia University, New York, and by extensive travel to gain wide experience of American business methods. He is a Fellow of the Chartered Institute of Secretaries, with which Institute he has been associated for over twenty years. He is also an Associate Member of the Institute of Transport and a member of its Examinations Committee. For some years he was Head of the Department of Transport of the Kennington Commercial (L.C.C.) Evening Institute, and he remains keenly interested in all matters connected with education and training. Mr. Taylor is also Honorary Treasurer of the G.W.R. Provident and Staff Friendly Societies.

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Mr. D. C. Woodward, Senior Traffic Assistant, Nigerian Railway, who, as recorded in our October 26 issue, has been appointed Chief Traffic Superintendent, was born on March 15, 1902, and was educated at St. Peter's Court, Broadstairs, and Christ's Hospital, Horsham. He joined the L.N.W.R. in 1918 as a probationer and, after experience in every branch of the Passenger, Goods and Operating Departments, was appointed District Runner at Swansea, L.M.S.R., on the Central Wales lines. Mr. Woodward left the L.M.S.R. in 1928 to take up the appointment of Assistant Traffic Superintendent, Nigerian Railway, on which he was promoted District Traffic Superintendent in 1938 and Senior Traffic Assistant in 1942.

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Mr. W. E. Hogg, C.B.E., A.R.C.Sc., Wh.Sch., M.Inst.C.E., who, as recorded in our October 12 issue, has retired from the position of Chief Inspecting Engineer, Crown Agents for the Colonies, was born in 1880, and was educated at the City of London School and Imperial College of Science. From 1897 to 1902 he was an engineering apprentice in the works of James Simpson & Co. Ltd. (now Worthington-Simpson Limited) and afterwards served for a period as draughtsman with the Brush Electrical Engineering Co. Ltd. From 1907 to 1910 he was Assistant Engineering Inspector with Rendel & Robertson (now Rendel, Palmer & Tritton). He then was appointed Engineering Inspector, Crown Agents for the Colonies. He became Assistant Engineer in 1919, and Deputy Head of the Engineering Inspection Department in 1920. Mr. Hogg was appointed Chief Inspecting Engineer & Head of the Engineering Inspection Department in 1934. That department is responsible for the inspection of rolling stock, engineering plant and equipment constructed in this country for service on the government railways, public works, harbours and docks of the Crown Colonies, British protectorates and mandated territories and Iraq. During the war the department was engaged also in inspecting, on behalf of the Ministry of Supply, machinery and equipment required for many of the munition and ordnance factories which were set up in this country and the Dominions. In addition, the inspection of a number of locomotives, required for service abroad on various strategic railways, was carried out.

*Mr. S. B. Taylor*

Appointed Joint Assistant Secretary Great Western Railway

*Mr. D. C. Woodward*

Appointed Chief Traffic Superintendent, Nigerian Railway

*Mr. W. E. Hogg*

Chief Inspecting Engineer, Crown Agents for the Colonies, 1934-45

### G.W.R. Appointments

Mr. H. Bolton, District Goods Manager, Gloucester, to be District Goods Manager, Newport.

Mr. W. Lampitt, Assistant District Goods Manager, London, to be District Goods Manager, Gloucester.

Mr. R. P. Davis, Goods Agent, Smithfield, to be Assistant District Goods Manager, London.

Mr. C. F. E. Harvey, Assistant & Chief Clerk, Divisional Superintendent's Office, Exeter, to be Assistant Divisional Superintendent, Birmingham.

Mr. C. J. Rider, Assistant, Assistant Superintendent of the Line's Office, Cardiff, to be Trade Advertising Agent, Superintendent of the Line's Office, Paddington.

Mr. A. E. Butler, Chief Clerk, Divisional Superintendent's Office, Paddington, to be Assistant Divisional Superintendent, Paddington.

Mr. I. Powell, Assistant, Divisional Docks Engineer's Office, Barry (Acting Assistant, Cardiff Docks), to be Assistant Divisional Docks Engineer, Barry.

### L.M.S.R. Appointments

Mr. L. W. Cox, District Controller, Liverpool (Lime Street), to be District Operating Manager, Liverpool (Lime Street).

Mr. J. R. Darbyshire, Outdoor Assistant to Divisional Superintendent of Operation, Crewe, to be District Operating Manager, Barrow-in-Furness.

Mr. J. V. Banks, Assistant to Divisional Superintendent of Operation, Manchester, succeeding Mr. J. R. Darbyshire as Outdoor Assistant to Divisional Superintendent of Operation, Crewe.

Mr. W. E. Blakesley, Assistant, Office of Superintendent of Motive Power, Watford H.Q., to be District Locomotive Superintendent, Bristol, in place of Mr. A. H. Whitaker, retiring.

Mr. I. C. Forsyth, District Locomotive Superintendent, Plaistow, succeeding Mr. W. E. Blakesley as Assistant, Office of Superintendent of Motive Power, Watford H.Q.

Mr. N R. Peach, Assistant District Locomotive Superintendent, Camden, to be District Locomotive Superintendent, Plaistow.

Mr. P. J. Fisher, Assistant District Controller, Leeds, to be Assistant District Operating Manager, Liverpool (Lime Street).

Mr. A. T. Frost, Goods Agent, Chester, to be Joint Goods Agent, Luton (L.M.S.R.-L.N.E.R.), in place of Mr. A. Boughey, retired.

Mr. A. Such, Stationmaster & Goods Agent, Wigston South (also in charge of Wigston, Glen Parva), to be Stationmaster & Goods Agent, Wembley (also in charge of North Wembley), in place of Mr. L. A. Shrives, retired.

### L.P.T.B. Staff Changes

Mr. J. B. Burnell, previously Divisional Superintendent of the Eastern Division of the Central Bus Operating Department, has been appointed Operating Manager (Central Buses), in succession to Mr. S. R. Geary, now General Manager (Road Services).

Mr. P. G. James, previously Accounts Officer, has been appointed Accountant, succeeding Mr. A. W. Green, who has retired.

Mr. T. S. Pick, previously Technical Investigation Officer in the Electrical Department, has been appointed Substation Engineer, succeeding Mr. W. R. Hackworth, who has retired.

### G.W.R. Publicity Department

The Publicity Department and Press Office of the Great Western Railway have been transferred from the Office of the Superintendent of the Line to that of the General Manager, under Mr. G. E. Orton, Chief Officer for Public Relations. Mr. J. Dewar, Publicity Officer, will continue to be responsible for all general publicity matters, but Press relations will be in charge of Mr. C. S. Lock, who has been appointed Press Officer.

Mr. C. S. Lock served with the Army Public Relations Service in France, Home Commands, Ireland, North Africa, Malta, Sicily and Italy from 1940 until his demobilisation on October 6 last. In the North African and Sicilian campaigns he was Public Relations Liaison Officer at Field-Marshal Alexander's H.Q., after which he was responsible for the organising and building up of the first of the Army's own network of wireless circuits and the road and air courier services necessary for quick transmission of Press copy, stills and films from the battle fronts to all parts of the world. For this work he was mentioned in dispatches. Mr. Lock, who rose to the rank of Major, with a staff appointment of Deputy Assistant Director of Public Relations, is well known to British, Dominions and American correspondents who covered the 1st and 2nd B.E.F. in France and the North African and Italian campaigns. He served four years with the H.A.C. in the Middle East in the war of 1914-18.

## L.M.S.R. Mechanised Goods Shed, Birmingham

### *Modern equipment at Lawley Street*

An interesting development in railway goods working took place at Birmingham on October 29, in the opening by the Lord Mayor of Birmingham of the mechanised goods shed recently erected by the L.M.S.R. in Lawley Street, which replaces the depot destroyed by fire in 1937. The directors of the company had invited a large number of representative Birmingham traders and industrialists to inspect the new shed and the working of the mechanised equipment. A reception at the Queen's Hotel was held by the Lord Mayor, and afterwards the guests visited the goods station in Lawley Street, where the new methods of working were explained and demonstrated by L.M.S.R. officials. Before the tour of inspection of the shed the Lord Mayor unveiled a tablet at the entrance to the shed commemorating the occasion.

Subsequently, the directors of the L.M.S.R. gave a luncheon at the Queen's Hotel at which, in the unavoidable absence of Lord Royden, Chairman of the Company, Sir Robert Burrows, Deputy-Chairman, presided, supported by :—

The Lord Mayor of Birmingham, Alderman W. T. Wiggins-Davies, J.P.; Alderman A. S. Giles, O.B.E., J.P.; Sir Frank Wiltshire, Town Clerk; Mr. H. J. Manzoni, C.B.E., M.Inst.C.E., City Engineer; Sir Arnold Musto, C.I.E., M.Inst.C.E., Regional Transport Commissioner; Colonel Sir Bertram Ford, T.D., LL.D., Managing Director of *The Birmingham Post & Mail*; Mr. H. J. S. Moyses, Managing Director, Birmingham Railway Carriage & Wagon Co. Ltd.; Sir William Wood, President, L.M.S.R.; Mr. T. W. Royle, Vice-President, L.M.S.R.; Mr. S. H. Fisher, Chief Operating Manager, L.M.S.R.; Mr. W. K. Wallace, Chief Civil Engineer, L.M.S.R.

In proposing the toast of "The City of Birmingham," Sir Robert Burrows said that Lord Royden had asked him to apologise to the gathering for the latter's absence from a function connected with Birmingham at which he had been anxious to attend, but at the last moment he had been prevented from being present. Lord Royden had therefore asked him (Sir Robert) to preside at the luncheon which was being given to celebrate the official opening of the mechanised goods station at Lawley Street. Sir Robert then said that he had regard for Birmingham as he felt that the city possessed something which others had not, especially in its vigorous civic life.

He was proud to think of the L.M.S.R. connection with Birmingham and the company intended to play its part in extending the trade of the city and, as an earnest of its intentions, it had built the mechanised goods shed at Lawley Street as a major contribution to the post-war city. The new shed was unequalled anywhere in this country and its mechanised equipment would be the centre of a great deal of attention from overseas.

The Lord Mayor, in replying, said that he was always pleased to contact the railway authorities as the interests of the city and the railway companies were mutual. He had been very impressed by the lay-out and equipment in the new goods shed which appeared to be equipped to meet requirements of the future as well as the present.

At the conclusion of the speeches the Lord Mayor presented to Sir Robert Burrows two metal plaques made by the Birmingham Railway Carriage & Wagon Co. Ltd., and which bore the city coat of arms, with the request that the plaques might be added to the nameplates on the L.M.S.R. locomotive carrying the name of the city, at the naming ceremony of which he had officiated recently.

L.M.S.R. Sailings to Ireland.—The L.M.S.R. states that sailings in each direction on the Heysham-Belfast service, as from November 1, are now every weekday instead of 3 times a week. Passengers holding sailing tickets for the steamer journey *via* the Heysham route require to travel by that route as sailing tickets *via* Heysham will not be honoured on the Stranraer and Larne service. From now on the arrangement for travel tickets routed *via* Heysham to be honoured *via* Stranraer and Larne without extra payment are cancelled. The alternative availability arrangements for travel tickets routed *via* Heysham to be available *via* Stranraer on payment of the difference in the single fares apply.

Railway Position in Argentina.—Sir Montague Eddy, Chairman of the Buenos Aires Great Southern Railway Co. Ltd. and the Buenos Aires Western Railway Limited, and of the British Railway Mission to Argentina, on his return from Argentina is reported to have told a representative of *The Financial Times* on Saturday last that at the present juncture it was impossible to make any statement as to the future of the British-owned railways in Argentina. Questions at issue affecting tariffs, exchange and other matters of importance to the companies, were complicated by the political changes in the country. Much would depend on the elections in Argentina this year.

Philidas Self-Locking Nuts.—We are informed that Philidas self-locking nuts are incorporated on the Gloster "Meteor" jet-propelled aircraft which is to attempt the world speed record.

# Staff and Labour Matters

## Dockers' Wages

The National Association of Port Employers gave its reply to the claim of the trade unions for improved rates of pay and conditions of service for dockers at a meeting of the Joint Council for the Docks Industry held on October 18, but because of the strike of dockers, which had been in progress throughout the country for some days, and was continuing, no progress could be made.

The claim on behalf of the dockers, which was submitted by the Transport & General Workers' Union, the National Union of General & Municipal Workers, the National Amalgamated Stevedore & Dockers and the Scottish Transport & General Workers' Union, was as follows :—

1. That the basic rate be increased from 16s. to 25s. a day. Grade 2 ports to be brought up to the higher minimum. The minimum to be on the daily basis instead of the half-daily basis.

2. That a permanent national scheme of decasualisation be introduced.

3. Two weeks' annual holiday with pay, payment for statutory holidays, a reduction in the working week to 40 hours, retiring allowances for aged and infirm dockers, and medical and port welfare services in all ports.

The claim, which previously had been submitted to the employers, was considered at a meeting of the National Joint Council for the Industry held on September 27, 1945, when the unions submitted their arguments in support of their proposals. At the meeting of the Council held on October 18, the employers made known the reply which they had prepared to the claim.

They put forward a comprehensive scheme for decasualisation and reorganisation of the industry which they described as a new charter for the industry. They offered every able-bodied dock worker employed at the greater ports a guaranteed minimum wage for each four-weekly period of £16 in the greater ports and of £15 in the smaller ports. All earnings would count against the guarantee but it was emphasised that the guaranteed minima were the least amounts that men would receive even if they did no work within the period and that this was a unique provision in any industry. In practice, many men would earn considerably more.

This offer compares with the 6s. attendance money now paid by the National Dock Labour Corporation for each half-day on which there is no available work, amounting in a full week of unemployment to £3 6s. These payments by the half-day do not affect a man's earnings during any part of a week in which he may have employment. The employers stated that the guarantee is an insurance for the men against short-term employment. It represents a heavy liability for the employers and it cannot be implemented unless every encouragement is given to full employment. It is obvious that the employers must have the right to determine the number of men to whom they will guarantee employment, and restrictive practices and conditions militating against full employment must be revised. In addition, the employers offer improved holiday conditions; the extension and improvement, where necessary, of existing medical and port welfare services; and arrangements for orderly recruitment and training of workers. They are also willing to examine the present basis of piecework, as the unions ask, and to review the existing classification of ports.

As regards pensions, some port employers already make retiring allowances to dock workers regularly employed by them, but viewing the matter nationally the obligation to give pensions to aged and infirm workers of any industry is one for the State under the national scheme, to which employers and workers in all industries contribute. The question of the 40-hour week is one for the Government to determine for industries generally. The dockers' normal working week is already only 44 hours and overtime, at increased rates of pay, is work done outside the normal day hours regardless of whether the individual has done any work during the day.

As to the union's application for an increase in the minimum daily rate from 16s. to 25s., the present rate is at the highest level in the history of the industry, and was given in recognition of the intermittent nature of employment. The employers now propose that dock workers should, in future, be employed on permanent terms with a minimum monthly guarantee and, in their view, the increase which the unions seek in the daily rate is not justified on any economic or social ground. The increase would saddle the industry with an intolerable burden and endanger the export, import, and coasting trades. Under existing conditions, dock workers can and do earn good wages without working long hours, and figures show that in Liverpool, for example, recent average earnings of the men were £7 19s. 9d. for a working week of 45·2 hours.

The increase proposed by the union would put the wages of dock workers out of all relationship to those of other workers and would imperil the wage structure of industry generally. The result would be a process of inflation, and the frustration of the Government policy of price control. The employers consider that if the claim is to be pressed by the unions it will be necessary to ask the Government for guidance on the wage policy of the country. If the Government considers that wages in industries generally should be increased it would be necessary for the docks industry to adjust its proposals to the altered economy.

As to holidays, the employers' offer is one week's holiday for a year's service with payment at the national time rate (£4 8s. in the greater ports instead of £4 as at present) and full pay at the standard time rate, increase of attendance money as at present, on statutory and proclaimed holidays recognised in local agreements.

Finally, the employers say, "We have offered instead of an increase in the daily wage something of far greater and more enduring benefit to the workers—namely, the abolition of casualness, with a guaranteed minimum wage," and they ask the trade unions and the men to co-operate with them forgetting past strife "to secure a new and better era for the docks industry." At the close of the meeting the following official statement was issued :—

"At a meeting of the National Joint Council for the Port Transport Industry the employers' side presented to the trade unions its considered reply to the trade unions' claim submitted on September 27, together with the employers' comprehensive proposals for decasualisation and reorganisation of the industry. The employers called attention to the fact that there was a large section of men on strike and referred to clause 18 of the constitution of the National Joint Council—no stoppage of work or lock out shall take place locally, sectionally, or otherwise pending any matter being submitted and adjusted under the conciliation procedure of this agreement and such adjustments shall be accepted by parties as final. In view of this the council was unable to make any progress by way of continuing the discussions at this stage. It was, however, agreed that the council will hold itself in readiness for an immediate continuation of the discussions as soon as a general resumption of work takes place."

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# Hurst, Nelson & Co. Ltd.

The 37th ordinary general meeting of Hurst, Nelson & Co. Ltd. was held on October 11 in the Merchants' House, Glasgow. Lt.-Colonel Arthur N. Forman (Chairman & Joint Managing Director) presided.

The Chairman said :—At the commencement of the war a large contract for the supply of covered wagons for use in France was placed with us, but, unfortunately, it was interrupted by the fall of France. Arrangements were made, however, for the quickest possible switch to other urgent work, and we soon commenced upon a programme which included wagons for service in this country and in Eastern theatres of war.

The company's facilities for the manufacture of tank wagons were taxed to their limit, principally to provide for the transport of petrol, oil, and chemicals. Considerable quantities of wagons for other purposes were also supplied, many of which were required by our own railways to meet the enormously increased burden thrown on them by war needs.

We were required also to devote an appreciable portion of our works capacity to the repairing of merchandise wagons, the demand for which services, due to the increased intensity of traffic, had expanded far beyond the repairing facilities which existed in this country at the outbreak of hostilities. This effort we regard as a valuable contribution, as speedy and unrestricted movement on the railways was among the most essential of the services behind the lines.

The programme placed before the country includes a policy of nationalisation, but the extent to which this will be made effective is not yet fully known. We must hope, however, that this policy will not be pursued to an extent which will create a state of affairs in which individual effort will be sacrificed to regimentation and in which private enterprise will be prevented from making that contribution to the welfare of the nation which, in the past, has been the main source of British progress.

Contracts in hand and in prospect constitute an extensive programme of supplies for India, liberated European countries, South America, Crown Colonies, and other foreign markets, as well as for home railways and other users in this country. We expect, therefore, that for some years to come, we shall be able to offer continuous employment of the classes of labour required for our manufacture to the full extent of our capacity.

In conclusion, I would ask you to join with me in thanking my colleagues on the board, our executives, our Works Manager, Mr. M'Pherson, and other employees of all ranks and grades at Motherwell, London and Sheffield, for their whole-hearted support during the past year, and for their most willing and able response to the varied demands made upon them during the war years.

The report and accounts were adopted.

# Parliamentary Notes

### Rosslare-Fishguard Service

Lord Walkden (Captain of the King's Bodyguard of the Yeomen of the Guard) in the House of Lords on October 25 expressed his regret that in reply to the motion by Lord Templemore in the House on October 19 concerning the rail and steamship services to Ireland, he inadvertently misled the House. He then stated that a decision had been reached to restore the Rosslare-Fishguard service, but the Minister of War Transport had since informed him that that was not the case, and that because of the lack of a suitable ship it was impossible, at the moment, to say when it would be practicable to re-open that particular service. The Minister of War Transport had made a statement to that effect in reply to a question in the House of Commons, and he (Lord Walkden) trusted that his words would remove any misapprehension that might still exist.

### Miscellaneous Transport Services

Mr. Alfred Barnes (Minister of War Transport) presented a Supplementary Estimate in the House of Commons on October 16 for a sum not exceeding £100,000 to defray the charge which will come in course of payment during the year ending on March 31, 1946, for the expenses of maintaining Holyhead Harbour and the Caledonian and Crinan Canals; and annuities in respect of light railways; and for the reimbursement to railway companies of payments to certain temporary railway employees in respect of overlapping income tax payments. He said that the Financial Secretary to the Treasury had explained the arrangements which the Chancellor of the Exchequer had made when introducing pay-as-you-earn income tax arrangements with reference to civil servants. The Chancellor's statement led to representations from the Railway Companies' Association as to railway staffs, and the Chancellor agreed to reimburse the railway companies for dealing with this problem of overlapping payments. He asked that the cash payments to be made should normally fall to be dealt with by the Inland Revenue Department as a matter of Treasury convenience. It had been agreed with the railway companies that they should meet this cost and be reimbursed by the Ministry of War Transport. The £100,000 would meet the railway reimbursement up to March 31 next.

The Estimate was agreed to.

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# Questions in Parliament

### Railway and Other Stoppages

Sir Waldron Smithers (Orpington—C.) on October 16 asked the Minister of Labour the number of man-hours lost from January, 1945, to the latest available date in unofficial stoppages on British railways, docks, trams and bus services; and what action did he propose to take to put an end to that type of action.

Mr. G. A. Isaacs (Minister of Labour): On the basis of such information as is available in my department, the aggregate number of man-days lost, from the beginning of this year up to the end of September, in stoppages of work arising from industrial disputes in the railway, dock, tramway and bus services in Great Britain, is estimated at about 360,000. There has been also a further loss of working time at the docks during the first two weeks of the present month, but statistics as to the number of man-days lost during that period are not yet available. The information available does not permit a distinction to be made between official and unofficial trade disputes. As regards the second part of the question, it is my policy to encourage the settlement of disputes by constitutional means.

Sir W. Smithers: In the national interest, will the Minister bring to the notice of the men concerned the facts and figures in simple form to show them the grave position of our export trade, the danger of inflation and the peril of the country as a consequence of these men's folly?

Mr. Isaacs: I do not think that reading an economics paper to men on strike will help them to go back to work.

### Lost or Stolen Goods on the Railways

Mr. Quintin Hogg (Oxford—C.) on October 15 asked the Minister of War Transport what were the latest figures regarding thefts of goods consigned by rail; and whether these showed an increase or decrease on previous figures.

Mr. Alfred Barnes: In the first six months of 1945, £1,311,000 was paid by the four main-line railway companies and the Cheshire Lines Committee in respect of 312,000 claims for articles lost or stolen. This compares with £1,197,500 and 343,750 claims in the first six months of 1944 and with £1,207,000 and 322,500 claims in the second six months of 1944. I regret that separate figures for thefts are not available.

Mr. Hogg: Having regard to this very high and disquieting increase, will the Minister say whether he has in mind any proposed action, and whether he will possibly consider the release of more railway police?

Mr. Barnes: I agree that this is a very serious development, and it is receiving every consideration.

### Wounded Servicemen's Travel

Mr. E. H. Keeling (Twickenham—C.) on August 22 asked the Minister of War Transport whether he was aware that wounded Servicemen in hospital blue were being turned out of first class seats by railway officials, even when no third class seats were vacant; and whether he would give instructions for this practice to cease.

Mr. Alfred Barnes: Apart from the instance to which Mr. Keeling has drawn my attention, I am not aware of any case in which a wounded Serviceman in hospital blue has been turned out of a first class seat when no third class seats are vacant. To obviate the possibility of any recurrence of this, instructions are being given to the railway staff on the subject.

Mr. Keeling: I should like to thank the Minister.

Mr. W. Gallacher (West Fife—Communist): Is the Minister aware that at Euston the other night a group of American soldiers were put out of a first class carriage so that officers could be put in, and that a number of civilians in the corridor then got into the carriage and refused to come out, and will he give a ruling that, when a train is crowded, whoever gets into a carriage first has the right to stay there?

Mr. Barnes: I am not responsible for all these interesting incidents that happen on the railways.

### Cheap Day Fares

Sub-Lieutenant H. L. Austin (Lancaster, Stretford—Lab.) on October 22 asked the Minister of War Transport whether he would now reply to his recent request for a revival of cheap day travel facilities.

Mr. Alfred Barnes: There are a number of difficult questions involved, such as the effect on passenger traffic, and I am considering the matter.

Lt.-Commander Gurney Braithwaite (Holderness—C.): While the Minister may not be able to restore the whole of these facilities, will he consider whether the time has not come when cheap day tickets might be issued to recognised parties, such as football teams and organised outings from time to time?

Mr. Barnes: I am afraid that at the present moment one must balance advantage against disadvantage in this matter.

Mr. Austin: Can the Minister give some indication when these facilities may be provided?

Mr. Barnes: No, Sir, not at the moment.

### Accidents to Railwaymen

Mr. J. A. Sparks (Acton—Lab.) on October 22 asked the Minister of War Transport if he would state the number of accidents, fatal and otherwise, separately, to railwaymen employed by all railway companies in Great Britain, together with their respective grades, for each year from 1938 to 1944 and for the first nine months of 1945.

Mr. Alfred Barnes: The information sought will take some time to collect but I shall let Mr. Sparks have it as soon as practicable.

Lt.-Colonel A. V. G. Dower (Penrith & Cockermouth—C.): Is it not possible on suitable occasions for instructions to be given in writing, and would not this lead to a reduction in the number of accidents?

Mr. Barnes: I should like to ask Lt.-Colonel Dower to put that question down.

### Travel Facilities to Ireland

Mr. Quintin Hogg (Oxford—C) on October 15 asked the Minister of War Transport when he would be in a position to announce a better travel service to Northern Ireland and Eire.

Sir Ronald Ross (Londonderry—C.) also asked the Minister of War Transport whether he had any statement to make as to restoring facilities for travel to Northern Ireland to their previous standard.

Mr. Alfred Barnes (Minister of War Transport): I hope that before Christmas two of the regular vessels, which are at present being reconditioned after release from war service, will be back on the Heysham—Belfast service. This will make a further vessel available for the Holyhead—Kingstown route and will enable sailings on the Liverpool—Belfast service to be increased to six a week in each direction. I also hope that before Christmas the Liverpool—Dublin service will be re-opened with three sailings a week in each direction and that an improved service will be provided between Glasgow and Belfast.

Sir R. Ross: Can the Minister give any information as to when the regular Liverpool—Belfast boats, of which there are two survivors, will again be available?

Mr. Barnes: What I have stated is as far as I can state at the moment.

Sir Patrick Hannon (Birmingham, Moseley—C.): Is the Minister taking into account the improvement of the service between this country and Rosslare?

Mr. Barnes: I am aware that that service must be restarted, but I cannot give any information at the present moment.

Mr. Hogg: Will the Minister bear in mind the possibility of conferring with the Minister of Civil Aviation with a view to a further air service between the two countries?

There was no reply.

Sir Patrick Hannon (Birmingham, Moseley—C.) on October 22 asked the Minister of War Transport if he contemplated any measure for the relief of the congestion, delay, and inconvenience which arose daily in the transport of passengers between Holyhead and Dublin and between Fishguard and Rosslare, especially the provision

of additional boat accommodation on both these routes; and if more efficient methods of dealing with passports and travel tickets would be introduced at Fishguard and Holyhead.

Mr. Alfred Barnes: As indicated in my reply to Sir Ronald Ross (Londonderry—C.) and Mr. Q. Hogg (Oxford—C.) on October 15, I hope that before Christmas an additional vessel will be available for the Holyhead-Kingstown service. There are services from Fishguard to Cork and Waterford, but no service to Rosslare at present because of the lack of a suitable ship. I regret that I am not in a position to say when it will be possible to provide a service on that route. The arrangements for dealing with passengers at Holyhead and Fishguard are constantly under review, and the time taken to pass them through the Controls and on to the ship recently has been substantially reduced. Further improvements will be made as and when conditions permit.

Sir P. Hannon: When will the Minister be able to tell the House when the improvement he suggests will come into operation and, in particular, the improvement in dealing with passports and travel tickets?

Mr. Barnes: Sir Patrick Hannon is quite aware of the general difficulties on this route and of the improvements that have been made. These improvements will be pressed forward as rapidly as possible.

Sir Frank Sanderson (Ealing East—C.): Is the Minister aware that the delay in traffic between Holyhead and Dublin is a disgrace to civilisation; and, if he cannot provide the necessary accommodation, will he see to it that tickets are not issued?

There was no reply.

### Workers' Transport Problems

Sir Robert Young (Lancaster, Newton—Lab.) on October 15 asked the Minister of War Transport whether the Report of the investigation undertaken, on behalf of his Ministry of Wartime Social Survey during 1943-44, on workers' travelling habits, under the title "Getting to Work," had been published; and, if not, would he make it available to Members of the House of Commons.

Mr. Alfred Barnes, in a written reply, stated: Inquiries into workers' transport problems were carried out by Wartime Social Survey, on behalf of the Ministry of War Transport, during two periods in 1943. These followed an enquiry on a much smaller scale in 1942. The circulation of the reports has been confined to the departments concerned, but for the convenience of members, I am arranging for copies to be placed in the library of the House.

### Road Accidents

Mr. Peter Freeman (Newport—Lab.) on October 15 asked the Minister of War Transport, whether it was his intention to introduce further legislation or take other effective action to secure the safety of the roads and to minimise the number of street accidents, particularly in regard to the speed through towns, efficiency of all motor vehicles, lay out of roads and further education of the public.

Mr. Alfred Barnes stated in a written answer: I have lately been giving a good deal of thought to the very serious road accident problem, and I hope shortly to be in a position to decide what action to be taken immediately to help reduce the toll of the roads.

Mr. E. H. Keeling (Twickenham—C.) on October 22 asked the Minister of War Transport how many persons were killed and injured on the roads during the war.

Mr. G. R. Strauss (Parliamentary Secretary, Ministry of War Transport): From September, 1939, to August, 1945, inclusive, 44,307 persons were killed on the roads. The reporting of injuries was discontinued from September, 1939, to March, 1941, inclusive, but from April, 1941, to August, 1945, inclusive, 608,940 persons sustained injuries due to road accidents.

Mr. Keeling: Has the Minister any plans other than those of his predecessor for diminishing this appalling carnage?

Mr. Strauss: Yes, sir; if Mr. Keeling will be good enough to wait about two weeks longer, certain plans will be launched which it is hoped will effect a considerable reduction in road accidents.

### Regulation 73B

Captain Sir Peter Macdonald (Isle of Wight—C.) on October 15 asked the Minister of War Transport when it was intended to rescind Regulation 73B, in so far as it prohibited the carriage of goods on roads in mechanically-propelled vehicles over a distance of more than 60 miles without official approval.

Mr. Alfred Barnes: This Regulation must be retained so long as the Road Haulage Organisation continues.

Sir P. Macdonald: For how long are these unnecessary restrictions to be maintained?

Mr. Barnes: At the moment I am not in a position to give any date.

### Civil Aviation Discussions with Eire

Mr. A. T. Lennox-Boyd (Mid Bedford—C.) on October 17 asked the Parliamentary Secretary to the Ministry of Civil Aviation if he could make a statement on the recent conversations between his Ministry and representatives from the Government of Eire in regard to civil aviation.

Mr. Ivor Thomas: In the course of a recent visit to this country of Mr. Lemass, Eire Minister of Industry & Commerce, the opportunity was taken to engage in preliminary discussions about the arrangements to be made between the two countries for the operation of our respective air services. It was agreed that Aer Lingus Teoranta should operate services between Eire and this country, and that reciprocal rights should be enjoyed by United Kingdom airlines. The use of the Shannon airport for trans-Atlantic services of United Kingdom airlines was also discussed and it was agreed that the existing temporary permit to the British Overseas Airways Corporation, authorising the use of Foynes and Rineanna, should be renewed, pending the conclusion of a long-term agreement.

### Exports to South America

Sir Patrick Hannon (Birmingham, Moseley—C.) on October 15 asked the Minister of War Transport to what extent improvement had been effected in shipping facilities for British goods to South American ports; and if he could give an assurance that further accommodation for consignments awaiting export would be made available with the least possible delay.

Mr. Alfred Barnes: I am able to provide shipping facilities for all the manufactured goods now available for shipment to South America. At the end of September only small quantities of manufactured goods were registered with the shipping lines as awaiting shipment. Shipping is being arranged to lift these items together with any others as they come forward. At the moment there are orders outstanding for large quantities of cement for Brazil, and shipment is being effected as quickly as labour and other facilities can be provided to bag the cement for export. I should like to take this opportunity of saying that the position in regard to South America is typical of the export trade generally, and I have every reason to believe that I shall be able to provide sufficient shipping to cover any manufactured goods becoming available for export.

### Steel Industry

Mr. R. Jennings (Sheffield, Hallam—C.) on October 17 asked the Minister of Supply & of Aircraft Production what were the intentions of His Majesty's Government as to introducing legislation for the nationalisation of the steel industry during the life of this Parliament in view of the fact shat such action would have grave results on our export trade.

Mr. W. Leonard (Parliamentary Secretary, Ministry of Supply) wrote in reply: No such legislation will be introduced this Session.

Squadron-Leader Sir Gifford Fox (Henley—C.) on October 22 asked the Minister of Supply & of Aircraft Production whether he was aware of the anxiety in various branches of the iron and steel industry, such as the pressed-steel industry, as to whether they were to be brought within the prospective nationalisation scheme; and whether, in view of the importance of reviving the motor-car industry and other industries dependent on iron and steel, he could make a statement forthwith to prevent further uncertainty.

Mr. John Wilmot in a written reply said: As stated in reply to a question by Mr. R. Jennings (Hallam—C.) on October 17, no legislation for the nationalisation of the steel industry will be introduced this Session. I am in close touch with the industry and am not aware that anxiety as to the future is impeding its efforts to improve its efficiency and meet the demands of its customers.

### Toolmakers

Mr. T. Scollan (West Renfrew—Lab.) on October 16 asked the Minister of Labour if, in view of the importance of engineering toolmaking to all industries in the nation, he would consider deferring, for two years, the call-up of young toolmakers and skilled technicians engaged in that section of the industry.

Mr. A. F. M. Palmer (Wimbledon—Lab.) also asked the Minister of Labour if he was aware of the difficulties which were being caused in the engineering industry by the call-up for the Forces of skilled toolmakers; and whether, in view of the importance of retooling for peace production and the export trade, he would reconsider the present policy.

Mr. G. A. Isaacs (Minister of Labour): The call-up of men from the engineering industry must proceed if the programmes of release from and intake to the Forces are to be maintained. In view of the present labour shortage the call-up may cause some difficulty to employers both in the engineering industry and elsewhere, but every effort will be made to reduce these to the minimum particularly as regards highly-skilled men who are needed for the re-establishment of our vital civilian industries.

Mr. Scollan: Is the Minister aware that the engineering toolmaking industry must not be confused with the engineering industry in general, and that it is the basic foundation of the whole of our industries? Is he also aware that numerous industries in the country to day are depending on that section to supply them with the necessary tools to make machinery?

Mr. Isaacs: Yes, sir. I can inform Mr. Scollan that toolmakers who were born before 1923 and who are engaged on important work are not being called up.

Mr. Palmer: Can the Minister say

whether the policy of the Government is to widen existing bottlenecks, and not create fresh ones ?

Mr. Isaacs : That is the policy.

Mr. R. R. Stokes (Ipswich—Lab.) : Is the Minister aware that these toolmakers cannot be replaced by men returning from the Forces, and that if he takes these men away he will cause a great deal of engineering unemployment ?

There was no reply.

**Proposed Forth Road Bridge**

Lt.-Commander Clark Hutchinson (Edinburgh West—C.) on October 15 asked the Minister of War Transport whether he could make any statement on the question of obtaining a grant from the Exchequer towards meeting the cost of the construction of a road bridge across the Forth estuary.

Mr. Alfred Barnes, in a written answer, stated: On July 26, the Lord Provost of Edinburgh was informed that a grant of 75 per cent. would be made from the Road Fund to the approved expenditure to be incurred, up to the stage of Royal Assent, to the promotion of a Provisional Order or Bill to authorise the construction of a road bridge over the Forth at the Mackintosh Rock site. It was also agreed that the Order or Bill might be prepared on the basis that a grant of 75 per cent. of the approved cost of the scheme would be made at such time as Parliament may approve the inclusion in the Road Fund Vote of the necessary financial provision.

**Petrol Imports**

Group-Captain J. W. M. Aitken (Holborn—C.) on October 15 asked the Minister of War Transport how many tankers were available under British control for bringing petrol to this country, compared with 1939, and their carrying capacity.

Mr. Alfred Barnes, in a written answer, stated: In 1939 there were 445 tankers of over 2,500 deadweight tons under the British flag, totalling about 4·7 million deadweight tons. The corresponding figures for September, 1945, are 400 tankers of 4·1 million deadweight tons. The British tanker fleet and the available European tankers which can be chartered for sterling are not enough to supply all the civil and military needs of the United Kingdom, the British Commonwealth, and other areas for which we are responsible. American tankers are available, but their use involves the expenditure of dollars.

## Eire's Trade Union Policy

In a letter to *The Times* published on October 22, Mr. C. N. Gallie, General Secretary of the Railway Clerks' Association, referred to the Eire Government's preferential policy to Eire trade unions and its antagonism to British trade unions, many of which, like the R.C.A., have a large membership in Eire. In 1941 the Eire Government introduced the Trade Union Act, enabling unions with headquarters in Eire to apply to a tribunal and secure a determination giving them the sole right to organise workers in any particular industry or section of an industry. The British trade unions, on the other hand, even if, like the R.C.A., they have a 95 per cent. membership of the workers catered for, are debarred from applying for such a determination. The British unions with membership in Eire are affiliated, along with some Irish unions, to the 51-year-old Irish T.U.C., which is recognised by the British T.U.C. But encouraged by the anti-British legislation in the Dail a breakaway organisation known as the "Congress of Irish Unions" has been formed with a minority membership of Eire workers.

When appointing workers' delegates and advisers to the I.L.O. Conference now being held in Paris, Mr. Lemass, with whom the British Government is negotiating, ignored the internationally recognised Irish T.U.C. and appointed two nominees from the Congress of Irish Unions.

A further example of the anti-British attitude of the Eire Government in trade union affairs is its refusal to permit wage increases secured by British railway trade unions to be applied to the workers of British railways employed in Eire; while at the same time the Eire Government has recently and specially amended the Statutory Rules and Orders to legalise wage increases negotiated by the Irish Transport and General Workers' Union, which is the principal body in the breakaway organisation, and whose general secretary, Mr. William O'Brien, has been nominated by Mr. Lemass as one of the workers' delegates to the I.L.O. Conference.

The Eire Government still declines to make a similar concession to British railway employees. This is an outstanding example of its biased attitude to the British trade union movement.

## L.N.E.R. Fish Traffic

To meet the seasonal demand the L.N.E.R. has arranged for more passenger- and goods-rated fish trains to run from Yarmouth and Lowestoft. The southern and western counties are served by trains leaving Yarmouth South Town at 3.10 p.m. and Lowestoft Central at 3.15 p.m. with connections in London to the Southern and Great Western Railways, giving arrivals at most destinations early the following morning. The Midlands and North-country districts are served by an additional train leaving Lowestoft Central at 2.40 p.m. (with connection leaving Yarmouth Vauxhall 2.40 p.m.) which has special connections at March for Peterborough and York. Traffic from Yarmouth Beach is covered by an additional service at 4.10 p.m. which serves L.M.S.R. and L.N.E.R. destinations *via* Peterborough North. Approximately 70 van loads of fish are cleared on these special seasonal services.

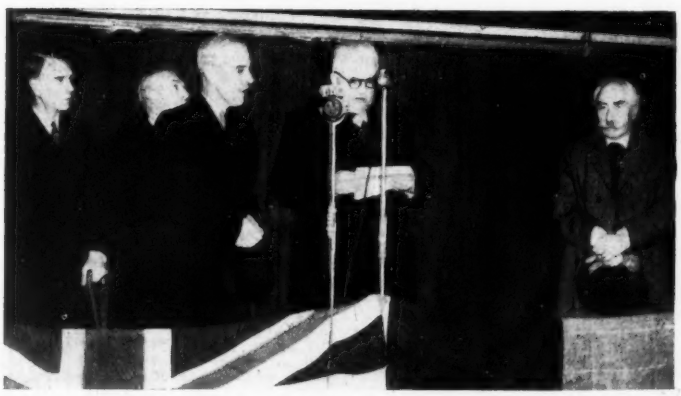
Short-distance traffic to the Eastern Counties is conveyed by ordinary passenger services, between 30 and 40 loaded vans being despatched daily from Yarmouth and Lowestoft.

It is expected that the volume of traffic will increase to 120 van loads at passenger rates daily.

Traffic for London is conveyed by goods services, and the booked services are supplemented by an additional train leaving Yarmouth South Town at 7.10 p.m. and Lowestoft Central at 8.10 p.m. giving an arrival in London just after midnight. An average of 35 loaded wagons daily are being despatched by this service.

In addition to the movement of fish, ancillary traffics such as salt, bunker coal and empty fish boxes, have to be specially catered for, frequently by the means of additional services.

## Naming Southern Railway "Merchant Navy" Locomotive "Belgian Marine"



*Sir Reginald Hill (Deputy Director General, M.W.T.); Sir Eustace Missenden (General Manager, S.R.); Colonel Eric Gore Browne (Chairman, S.R.); M. Rongvaux (Belgian Minister of Communications); Baron de Cartier de Marchienne (Belgian Ambassador), at the naming ceremony before the re-opening of the London and Brussels Continental service* *(see p. 433 of last week's issue)*

*M. Rongvaux in the driver's cab of the Southern Railway "Merchant Navy" class locomotive No. 21C17 after it had been named "Belgian Marine"*

## Notes and News

**Babcock & Wilcox Limited.**—The usual interim ordinary dividend of 4 per cent., less tax at 9s. 8d. in the £, is being paid on November 14 by Babcock & Wilcox Limited.

**Egyptian Rolling Stock Credit.**—According to a Reuters message from Cairo, a credit of £E.4,000,000 to buy rolling stock for the Egyptian State Railways has been voted at a recent meeting of the Cabinet.

**New Title for Bengal & Assam Railway.**—An official notification issued by the Government of India states that the Bengal & Assam Railway henceforth shall be known as the Bengal Assam Railway.

**Overseas Employment.**—A senior draughtsman (engineering) is required by the Kenya & Uganda Railways & Harbours for one tour of two to four years, with prospect of permanency. Candidates must have sound knowledge of railways, yard layouts, and signalling arrangements. See Official Notices on page 467.

**Chinese Engineers to be Trained in England.**—A further sixty Chinese engineering post-graduates who are to be trained in British engineering works, under the scheme arranged by the F.B.I. in conjunction with the Chinese Government, recently were welcomed in London by Sir Frank Gill, Chairman of the F.B.I. China Committee. These apprentices have been allotted to thirty engineering works in various parts of Great Britain.

**Indian Government Railways.**—The title Indian State Railways, which has been applied for many years to the railways under the Government of India, is being replaced by that of Indian Government Railways. The abbreviation I.S.R. is giving place to I.G.R. The change-over will enable a better differentiation to be made between Government railways and those operated by Indian States, for example, Jodhpur, Bikaner and Mysore.

**Great Southern Railways Pensioners.**—Allowances for hundreds of retired workers of the Great Southern Railways have been increased by the Irish Transport Company to 17s. a week for all married men whose wives are living. In addition they will receive a voucher representing a cash value of 5s. a week. These men do not qualify for inclusion in the pensions and benefits scheme introduced by the Irish Transport Company, as they had already retired.

**Mexican Railway Co. Ltd.**—The working of the undertaking of the Mexican Railway Co. Ltd. for the half year to December 31, 1944, resulted in a deficit of 2,521,222 pesos. Earnings were 12,748,140 pesos and working expenses 15,269,362 pesos. It is shown in the statement by the Chairman, Mr. Vincent W. Yorke, issued with the report and accounts, that the earnings constituted another record. This was in spite of a decrease of 524,000 pesos in passenger traffic arising from the cancellation of passenger trains and a reduction of passenger facilities to enable more goods traffic to be moved. Import traffic improved most remarkably; the tonnage rose from 6,479 tons to 47,309 tons and the revenue from 157,658 pesos to 1,064,954 pesos. Heavier movement of freight accounted for a large proportion of the increase in working expenses, which were again higher than any previously recorded, but revenue account had also to bear heavier charges for salaries and wages. Aided by an increase of 23 per cent. in tariffs and by the growth of goods traffic a profit of 418,000 pesos was earned during the seven months to July 31, 1945, as compared with a loss of 1,774,000 pesos in the corresponding period of 1944.

**Wm. Beardmore & Co. Ltd.**—An unchanged interim dividend of 3 per cent. on the ordinary stock is announced by Wm. Beardmore & Co. Ltd. on account of the year 1945.

**Brush Electrical Engineering Co. Ltd.**—An interim dividend of 4 per cent. on the ordinary capital is being paid by the Brush Electrical Engineering Co. Ltd. in respect of 1945. Interim ordinary dividends were resumed last year.

**Noral Alloys.**—The Northern Aluminium Co. Ltd. is changing the name of its alloys progressively from "NA" to "NORAL." The purpose is to identify the company's trade mark with its products and the change is made effective in the *Noral Castings Handbook*, which has been revised and is being issued.

**Dublin Tramway Wayleaves.**—An agreement has been reached between the Irish Transport Company and the Dublin Corporation which provides for the payment by the company to the corporation of £170,000 as compensation in respect of the wayleaves charge of £14,000 per annum payable by the former Dublin United Tramways Company.

**Canadian-Built Locomotives for N.W.R., India.**—Thirty-four Canadian-built 2-8-2 broad-gauge tender engines have been allotted to the North Western Railway, India. Thirty-two will be stationed at Rawalpindi, and the remaining two at Lahore. An illustrated description of the first of these locomotives to be delivered to the N.W.R. was published in our August 10 issue.

**Skefko Ball Bearing Co. Ltd.**—An interim tax free dividend of 3d. per 5s. unit (5 per cent.), in respect of 1945, payable November 10, is announced by Skefko Ball Bearing Co. Ltd. This compares with an interim of 4d. per unit (6⅔ per cent.) for 1944. The directors state that taking into account trading results and problems of the transition period it has been considered prudent to limit the interim dividend.

**Peter Brotherhood Limited.**—In the course of his statement circulated with the report and accounts of Peter Brotherhood Limited for the year to March 31, 1945, the Chairman (Mr. A. Marcus Neal) said that as a result of suspension and cancellation of service contracts the output of the company for the 12 months was reduced by nearly a third compared with the output of the previous year. During the six years from September, 1939, the total value of the company's output amounted to some £10,500,000. The transition period would be a testing time for everyone, but the company had on its books a large number of orders, including air compressors for diesel-driven vessels, steam and water turbines for export, refrigeration machinery and general structural work, which were now being taken in hand, and which should provide profitable employment.

**The Road Haulage Association Limited.**—A Rates Committee has been appointed by the Road Haulage Association Limited to supervise the activities of the Association in regard to rates; to co-ordinate the work of functional groups and committees, and area rates committees, when dealing with rates; to maintain contact with the Road & Rail Central Conference through the Road Panel; to confer with the Ministry of War Transport or other bodies, and to negotiate and fix rates as necessary. The Rates Committee met recently for the first time and appointed Mr. F. F. Foler as Chairman. The Committee will meet regularly and will give special attention to rates for commodities such as bricks, cement, livestock, milk, sand and ballast, and sugar beet.

**L.N.E.R. Asks the Public.**—The L.N.E.R. states that 17,000 copies of the booklet entitled "Design for Comfort," which it issued in connection with the recent quiz of its main-line passengers into

## British and Irish Railway Stocks and Shares

| Stocks | Highest 1944 | Lowest 1944 | Prices Oct. 30, 1945 | Prices Rise/Fall |
|---|---|---|---|---|
| **G.W.R.** | | | | |
| Cons. Ord. ... ... | 62¾ | 55 | 55½ | + ¼ |
| 5% Con. Pref. ... | 122¼ | 114¾ | 110½ | + 1 |
| 5% Red. Pref. (1950) | 110½ | 104 | 103 | — |
| 5% Rt. Charge ... | 135½ | 128 | 125 | + 1 |
| 5% Cons. Guar. ... | 134⅞ | 125 | 123½ | + 1 |
| 4% Deb. ... ... | 118¾ | 112¾ | 113½ | + 2½ |
| 4½% Deb. ... ... | 118½ | 114 | 113½ | + 2 |
| 4½% Deb. ... ... | 124½ | 119½ | 117 | + 1 |
| 5% Deb. ... ... | 137 | 129½ | 128 | — |
| 2½% Deb. ... ... | 77 | 73½ | 81 | + ½ |
| **L.M.S.R.** | | | | |
| Ord. ... ... ... | 34⅞ | 27⅞ | 27¾ | — |
| 4% Pref. (1923) ... | 64¼ | 55 | 58 | — |
| 4% Pref. ... ... | 81 | 72¼ | 76½ | + ½ |
| 5% Red. Pref. (1955) | 105⅞ | 102 | 101¼ | — |
| 4% Guar. ... ... | 107½ | 99½ | 102½ | + 1 |
| 4% Deb. ... ... | 111¼ | 104 | 107 | + ½ |
| 5% Red. Deb. (1952) | 111 | 108 | 101½ | — |
| **L.N.E.R.** | | | | |
| 5% Pref. Ord. ... | 10½ | 7⅞ | 6¾ | — |
| Def. Ord. ... ... | 5⅞ | 3¾ | 3½ | — |
| 4% First Pref. ... | 68¾ | 55¼ | 57 | — |
| 4% Second Pref. ... | 35⅜ | 28½ | 29 | — |
| 5% Red. Pref. (1955) | 101 | 97½ | 98 | — |
| 4% First Guar. ... | 101½ | 96⅜ | 101½ | + 1½ |
| 4% Second Guar. ... | 95½ | 88½ | 94½ | + 2½ |
| 3% Deb. ... ... | 88½ | 80⅜ | 90½ | + 1½ |
| 4% Deb. ... ... | 110½ | 103½ | 106½ | + 2½ |
| 5% Red. Deb. (1947) | 105⅜ | 101¼ | 101 | — |
| 4½% Sinking Fund Red. Deb. ... ... | 107 | 104½ | 104½ | — |
| **SOUTHERN** | | | | |
| Pref. Ord. ... ... | 80¼ | 71⅞ | 73½ | + ½ |
| Def. Ord. ... ... | 26⅜ | 23 | 23½ | — ½ |
| 5% Pref. ... ... | 122 | 113½ | 109½ | + 1 |
| 5% Red. Pref. (1964) | 117½ | 112½ | 110½ | — |
| 5% Guar. Pref. ... | 134 | 125½ | 123½ | + 1 |
| 5% Red. Guar. Pref. (1957) ... ... | 115⅜ | 112½ | 109 | — |
| 4% Deb. ... ... | 118 | 110 | 112½ | + 1½ |
| 5% Deb. ... ... | 135½ | 127 | 127 | — |
| 4% Red. Deb. (1962-67) ... ... ... | 111½ | 107½ | 107½ | — |
| 4% Red. Deb. (1970-80) ... ... ... | 112 | 108¾ | 108½ | — |
| **FORTH BRIDGE** | | | | |
| 4% Deb. ... ... | 107 | 103 | 104 | — |
| 4% Guar. ... ... | 106½ | 102 | 103 | — |
| **L.P.T.B.** | | | | |
| 4½ "A" ... ... | 125 | 119 | 119½ | — |
| 5% "A" ... ... | 133½ | 128 | 129½ | — |
| 3% Guar. (1967-72) | 99½ | 98 | 99 | — |
| 5% "B" ... ... | 124½ | 118⅞ | 119½ | — |
| "C" ... ... | 72¾ | 64½ | 66 | + 1 |
| **MERSEY** | | | | |
| Ord. ... ... ... | 35⅜ | 33 | 32 | — |
| 3% Perp. Pref. ... | 72 | 66 | 69 | — |
| 4% Perp. Deb. ... | 105 | 103 | 104 | — |
| 3% Perp. Deb. ... | 85½ | 79½ | 80 | — |
| **IRELAND*** | | | | |
| BELFAST & C.D. | | | | |
| Ord. ... ... ... | 9 | 6 | 7½ | — |
| **G. NORTHERN** | | | | |
| Ord. ... ... ... | 33⅞ | 19 | 33½ | + ⅜ |
| Pref. ... ... ... | 49 | 37 | 50¼ | + ¼ |
| Guar. ... ... ... | 70 | 57⅞ | 78½ | + 1½ |
| Deb. ... ... ... | 90½ | 81½ | 95 | — |
| **IRISH TRANSPORT** | | | | |
| Common ... ... | — | — | 79½ | + 1½ |
| 3% Deb. ... ... | — | — | 100¾ | + ½ |

* Latest available quotation

# OFFICIAL NOTICES

*None of the vacancies on this page relates to a man between the ages of 18 and 50 inclusive unless he is excepted from the provisions of the Control of Engagement Order, 1945, or the vacancy is for employment excepted from the provisions of that Order.*

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

OVERSEAS EMPLOYMENT: SENIOR DRAUGHTSMAN (ENGINEERING) required by the Kenya and Uganda Railways and Harbours for one tour of 2 to 4 years, with prospect of permanency. Salary £500 a year rising to £600 a year plus war bonus at present about £26 for a single man and £81 for a married man, with additional allowances for children. £30 outfit allowance payable in Kenya. Free passages and quarters. Candidates must have a sound knowledge of railways, yard layouts and signalling arrangements.

Written applications (no interviews), giving the following essential details: (1) Full name, (2) Date of birth, (3) Qualifications and experience, (4) Name and address of present employers, (5) Details of present work, should be sent to The Secretary, Overseas Manpower Committee (Ref. 1599), Ministry of Labour and National Service, York House, Kingsway, London, W.C.2. Applications cannot be acknowledged.

**Universal Directory of Railway Officials and Railway Year Book**

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their requirements for future railway travel have been completed by the public, and that the analysis of the replies is to be published in the near future. The quiz was dealt with in our October 5 issue.

**Lightalloys Limited.**—A final dividend of 12½ per cent. (same), again making 25 per cent. for the year to June 30, 1945, is announced by Lightalloys Limited. The net profit is £23,133, against £37,270, after taxation.

**Cost-of-Living Index.**—At October 1, the official cost-of-living index figure was 103 points above the level of July, 1914, showing no change as compared with a month earlier. At October 1, 1938, it was 55 points, and at October 1, 1939, 65 points, above July, 1914.

**Irish Transport Bus Timetables.**—On and from October 15 alterations have been made in the bus timetables of the Irish Transport Company on the following routes:—Dublin-Edenderry; Cork-Waterford; Cork-Ballycotton; Cork-Newcastle West; Cork-Glengarriff; Tralee-Limerick; Listowel-Ballybunion; Limerick-Kilkee; Limerick-Lisdoonvarna; Galway-Lisdoonvarna-Lahinch; Galway-Carraroe-Annaghvane; Sligo-Rosses Point; and Sligo-Strandhill.

**Nyasaland Railways Limited.**—The report of Nyasaland Railways Limited for the year 1944 shows that the results of the working of the railways, including the Northern Extension and the Lake service, compared with 1943, were: Gross receipts £217,709 (£219,021), working expenses £130,595 (£122,086), and net receipts £87,114 (£96,935). Working expenses included £26,192 (£31,887) appropriated to reserve for renewals, and the operating ratio, exclusive of renewals, was 47·95 per cent. (41·18 per cent.). Total tonnage carried was 98,018 (108,926) and the number of passengers was 294,298 (285,134). Passenger receipts were £38,525, against £35,839, and goods traffic receipts £157,335, against £161,478. Provision during the year of £21,236 for redemption of the 5 per cent. "A" debenture stock has reduced the amount of that stock outstanding to £590,770.

**Dorada Railway Co. Ltd.**—Gross revenue of the Dorada Railway for the year 1944 was £324,825 (£272,661) and working expenses were £183,917 (£160,321), leaving a balance to net revenue account of £140,908 (£112,340). After providing for debenture interest, £55,405 for exchange difference, £55,405 for taxation, and for other items there was a balance of £52,025. The tax-free dividend of 3 per cent. required £32,261, leaving £15,764 to be carried forward. Passenger receipts advanced from £32,302 to £44,018 and goods receipts from £228,808 to £272,131. Expenses were increased by the rise in the cost of wages, materials, etc., and by the larger tonnage hauled. More severe competition by road is to be expected when normal trade conditions are re-established. Additional rolling stock and other new equipment is being ordered. The net earnings of £7,699 from the Ropeway Branch in 1944 were the best since 1938.

**Institution of Civil Engineers Presidential Address.**—Sir Peirson Frank will deliver his presidential address to the Institution of Civil Engineers on November 6 at 5.30 p.m.

**John Thompson Engineering Co. Ltd.**—A dividend of 5 per cent. on the ordinary shares, less tax, has been declared by John Thompson Engineering Co. Ltd., in respect of the year 1945, the same as for 1944.

**Thos. W. Ward Limited.**—A final dividend is announced of 6¼ per cent. on the ordinary shares of Thos. W. Ward Limited, making with the 2¾ per cent. interim, 10 per cent., less tax, for the year ended June 30, 1945. Both interim and final are the same as for the past two years. The net profit, after taxation and depreciation, is £134,696, against £120,447.

**Bengal & North Western Railway Co. Ltd.**—The liquidators of the Bengal & North Western Railway Co. Ltd. (in voluntary liquidation) announce that a final capital distribution of £5 11s. 1d. per £100 of ordinary stock will be made on December 3, 1945. A first distribution of £310 per cent. on capital in respect of the purchase of the railway by the Indian Government was made on March 1, 1943, a second distribution of £52 took place on May 1, 1944, and a third payment of approximately £19 in May, 1945.

**Eire Railways Priority List.**—Replying to a question in the Dail on October 24, Mr. S. Lemass, the Eire Minister for Industry & Commerce, said that at present Coras Iompair Eireann were required to give priority to coal for railway purposes, beet, turf and cut timber for fuel, agricultural seeds, manures, grain and grain products, bread, potatoes, coal for industrial purposes, petroleum products, butter, eggs, milk, cream, meat, fish, poultry, livestock and groceries. Similar directions had not been issued to the other forms of transport.

## Contracts and Tenders

Mr. A. P. Gibbs has been appointed North Western Area Manager of Ransome & Marles Bearing Co. Ltd., with offices at 5, John Dalton Street, Manchester, 2, which is also the new address of the company's offices in Manchester.

On relinquishing his appointment as Controller of Light Metals in the Ministry of Aircraft Production to rejoin the British Aluminium Co. Ltd., Mr. G. W. Lacey, B.Sc., A.R.I.C., has been appointed General Sales Manager of the company, at Salisbury House, London Wall, London, E.C.2. Mr. G. A. Anderson, B.A., recently Deputy Controller of Light Metals, rejoins the Company as Deputy General Sales Manager.

Below is a list of orders placed recently by the Egyptian State Railways:—

Standard Telephones & Cables Limited: Valves.
George Salter & Co. Ltd.: Helical springs.
Marconi's Wireless Telegraph Co. Ltd.: Receiving valves.
Tunton Bros. & Mathews Limited: Helical springs.
James Arnott & Sons Ltd.: Grease, tallow.
Thomas Bolton & Sons Ltd.: Locomotive spares, lead ingot, plates, copper, etc.
Morgan Crucible Co. Ltd.: Electrical accessories.
Belfast Ropeworks Co. Ltd.: Cord.
Ransomes, Sims & Jefferies Limited: Spares for electric trucks.
Groven & Co. Ltd.: Washers, screws and rivets.
Guest Keen & Nettlefolds Limited: Washers, screws and rivets.
River, Bolt and Nut Co. Ltd.: Washers, screws and rivets.
W. Canning & Co. Ltd.: Sulphate and nickel.
British Insulated & Callenders Cables Limited: Copper wire.
C. C. Wakefield & Co. Ltd.: Oils.
Benjamin Electric Limited: Reflectors.
Imperial Chemical Industries Limited: Copper wire.
Gresham & Craven Limited: Steel brake valves.
P. & W. MacLellan Limited: Mild-steel section.
Brown Bros. Ltd.: Spares for bicycles.
Alfred Herbert Limited: Lathe chuck.
Buck & Hickman Limited: Screws.
British Thomson-Houston Co. Ltd.: Electric fittings.
Allen & Hanbury's Limited: Instruments.
Workington Iron & Steel Co. Branch of the United Steel Cos. Ltd.: Ferro maganese.
St. Helens Smelting Co. Ltd.: Antimony.
Metropolitan-Vickers Export Co. Ltd.: Machine plants and parts.
Robert Hyde & Sons Ltd.: Locomotive spares.

## Forthcoming Meetings

November 8 (*Thu.*).—Southern Railway Lecture & Debating Society, Chapter House, St. Thomas's Street, London Bridge, S.E.1. 5.45 p.m. "Air Topics," by Mr. D. H. Handover, M.Inst.T., Air Adviser to the British Railways.

November 9 (*Fri.*).—The Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1. 5.30 p.m. "Elementary Principles of Plant Organisation and Maintenance for Civil Engineering Contractors," by Mr. H. O. Parrack, A.M.I.Mech.E.

November 12 (*Mon.*).—The Institution of Transport at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2. 5.30 p.m. "Modern Methods of Handling Goods at Railway Stations," by Mr. T. W. Royle, C.V.O., M.B.E., a Vice-President.

# Railway Stock Market

After the active and rising markets which arose from the Budget tax cuts, conditions quietened down with profit-taking developing, although all but a small part of earlier gains was held. British Funds eased; an exception was 2½ per cent. Consols; short-dated stocks reflected selling on the view that repayment is likely to be proposed by the Government at the earliest dates, and it was reported that proceeds of the sales were being reinvested in the "tap" issues. Buying of industrials has now become much more selective than was the case a week ago. It is recognised that there is unlikely to be any early general rise in dividends, particularly in view of transition difficulties and the fact that the E.P.T. reduction has been made expressly to stimulate modernisation of plant and machinery. Moreover, this week sentiment in stock markets has come more under the influence of international affairs. South American securities, including railway stocks, continued out of favour in view of the uncertainty surrounding political developments, which have now extended to Brazil.

Home rails continued their firm undertone, with prior charges attracting buyers on the view that yields are still attractive when judged in relation to the high investment status of these stocks, full regard to which would have to be given in any nationalisation developments. Junior stocks, although less active generally, were slightly higher; buyers came in on the belief that the fixed rental and dividends around current levels, are likely to continue for another two years. It is also becoming more widely realised that the recent scaling down of yields on industrial shares gives the yields on home rail juniors added attractions in comparison.

The outlook is bound up with Government policy, but in a lesser degree this also applies to many other industries; and the view is widely held that "fair compensation" can be expected in the event of nationalisation. Moreover, it is pointed out that home railway junior stocks are probably undervalued on this basis, bearing in mind that current dividends under the existing fixed rental have a close resemblance to the average dividends paid on individual stocks since the grouping of the railways. This is adding to the growing assumption that nationalisation terms could not be based on a lower level than existing dividends, and that the large yields may very well offer scope for satisfactory appreciation in price over current levels.

In particular, there is still a tendency in many quarters to favour preference stocks, especially L.M.S.R. 1923 preference and L.N.E.R. first preference, and Southern preferred are also attracting attention on the belief that the current yields seem unduly generous, bearing in mind the investment merits of these stocks and their average dividends since grouping. Great Western ordinary is also being favoured on similar grounds, but from the near-term angle, this does not, of course, imply that these stocks would offer better prospects of capital appreciation, than, for example L.M.S.R. ordinary or Southern deferred, when the home railway markets develop further activity.

Compared with a week ago, Great Western ordinary has risen further from 55 to 55½; the 5 per cent. preference at 111 gained another point, the guaranteed stock was unchanged at 123, but the 4 per cent. debentures rose two points to 113. L.M.S.R. ordinary at 27¾ was ¼ better on balance, the 1923 preference maintained at 58, and the senior preference at 76, the 4 per cent. debentures rose further to 107.

L.N.E.R. second preference strengthened afresh from 28⅛ to 28¾; the first preference remained at 57, and the 4 per cent. debentures rose further to 106½ and the 3 per cent. debentures were three points higher at 91. Southern 4 per cent. debentures were also good at 112½, compared with 110½ a week ago. Southern deferred at 23½ was slightly down on balance, but the preferred was ½ better at 73½. London Transport "C" moved higher again at 66. Elsewhere, Metropolitan Assented stock moved up to 60.

South American railway stocks remained subdued by political uncertainties, but little selling was reported. Buenos Ayres Great Southern was 11, compared with 11¼ a week ago, the 5 per cent. preference 24½, compared with 25; but the 4 per cent. debentures at 64½ were better on balance. The Central Argentine statement emphasises the increase in expenses due to the cost of fuel, etc., and the debenture moratorium scheme will have to be extended beyond December 31 next. San Paulo ordinary eased on the news from Brazil. Canadian Pacifics at 19 11/16 were lower on balance, but an earlier sharp decline was partly regained.

## Traffic Table and Stock Prices of Overseas and Foreign Railways

| | Railways | Miles open | Week ended | Traffic for week: Total this year | Traffic for week: Inc. or dec. compared with 1943, 4 | No. of Week | Aggregate traffics to date: Totals 1944/5 | Aggregate traffics to date: Totals 1943/4 | Aggregate traffics to date: Increase or decrease | Shares or Stock | Prices: Highest 1944 | Prices: Lowest 1944 | Prices: Oct. 30 1945 | Prices: Yield % (See Note) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South & Central America | Antofagasta (Chili) & Bolivia | 834 | 21.10.45 | £ 26,820 | — £ 3,390 | 42 | £ 1,252,060 | £ 1,197,310 | + £ 54,750 | Ord. Stk. | 13½ | 9½ | 11 | Nil |
| | Argentine North Eastern ... | 753 | 20.10.45 | 17,825 | + 788 | 16 | 306,000 | 282,519 | + 23,481 | " | 6½ | 4½ | 8 | Nil |
| | Bolivar ... ... ... | 174 | Sept., 1945 | 4,668 | — 570 | 39 | 44,105 | 47,755 | — 3,650 | 6 p.c. Deb. | 18¾ | 7¾ | 8½ | Nil |
| | Brazil ... ... ... ... | — | — | — | — | — | — | — | — | Bonds | 19 7/16 | 15 | 22½ | Nil |
| | Buenos Ayres & Pacific ... | 2,771 | 20.10.45 | 115,937 | — 13,438 | 16 | 1,976,812 | 1,919,125 | + 57,687 | Ord. Stk. | 7 1/16 | 3¾ | 5½ | Nil |
| | Buenos Ayres Great Southern | 5,080 | 20.10.45 | 158,250 | — 23,438 | 16 | 3,067,875 | 2,740,750 | + 327,125 | Ord. Stk. | 14⅝ | 9¾ | 11 | Nil |
| | Buenos Ayres Western ... | 1,924 | 20.10.45 | 60,687 | — 22,188 | 16 | 1,115,562 | 1,069,187 | + 46,375 | " | 13¾ | 9¼ | 10½ | Nil |
| | Central Argentine ... ... | 3,700 | 20.10.45 | 172,466 | + 12,881 | 16 | 3,040,690 | 2,853,197 | + 187,493 | " | 10½ | 6⅝ | 7½ | Nil |
| | Do. ... ... | — | — | — | — | — | — | — | — | Dfd. | 4¾ | 3 | 4 | Nil |
| | Cent. Uruguay of M. Video | 972 | 20.10.45 | 36,766 | + 9,311 | 16 | 546,513 | 487,892 | + 58,621 | Ord. Stk. | 5½ | 4 | 6½ | Nil |
| | Costa Rica ... ... ... | 262 | Aug., 1945 | 32,060 | + 7,067 | 13 | 63,153 | 53,315 | + 9,838 | Stk. | 17½ | 14¼ | 15 | Nil |
| | Dorada ... ... ... | 70 | Sept., 1945 | 29,800 | — 50 | 39 | 273,135 | 237,415 | + 35,720 | 1 Mt. Deb. | 101 | 101 | 101½ | £5 18/3 |
| | Entre Rios ... ... ... | 808 | 20.10.45 | 24,481 | + 2,937 | 16 | 417,968 | 378,225 | + 39,743 | Ord. Stk. | 6½ | 4½ | 7 | Nil |
| | Great Western of Brazil ... | 1,030 | 20.10.45 | 31,000 | + 5,300 | 42 | 1,026,900 | 394,400 | + 132,500 | Ord. Stk. | 38/- | 23/3 | 26/6 | Nil |
| | International of Cl. Amer. ... | 794 | Sept., 1945 | $615,723 | + $122,464 | 39 | $6,867,641 | $5,799,919 | + $1,067,722 | — | — | — | — | — |
| | Interoceanic of Mexico ... | — | — | — | — | — | — | — | — | 1st Pref. | 1¾ | ¼ | 1 | Nil |
| | La Guaira & Caracas... ... | 22¾ | Sept., 1945 | 6,742 | — 294 | 39 | 56,245 | 71,331 | + 15,086 | 5 p.c. Deb. | 88 | 79 | 76½ | 6/10/9 |
| | Leopoldina ... ... ... | 1,918 | 20.10.45 | 65,702 | + 20,786 | 42 | 2,215,322 | 1,966,137 | + 249,185 | Ord. Stk. | 5⅞ | 4¼ | 4 | Nil |
| | Mexican ... ... ... | 483 | 21.10.45 | ps 549,6 00 | + ps. 99,200 | 16 | ps10,422,200 | ps. 7,916,900 | + ps. 2,505,300 | Ord. Stk. | ½ | ⅛ | 1¾ | Nil |
| | Midland Uruguay ... ... | 319 | Sept., 1945 | 18,431 | + 2,169 | 13 | 55,363 | 51,326 | + 4,037 | — | — | — | — | — |
| | Nitrate ... ... ... | 382 | 15.10.45 | 8,408 | + 2,967 | 41 | 146,086 | 141,342 | + 4,744 | Ord. Sh. | 75/10 | 65/10 | 75/- | £3 11 |
| | North Western of Uruguay | 113 | Sept., 1945 | 4,379 | — 1,042 | 13 | 15,562 | 18,480 | — 2,918 | — | — | — | — | — |
| | Paraguay Central ... ... | 274 | 19.10.45 | £59,004 | — £ 1,100 | 16 | £978,136 | £933,130 | + £45,006 | Pr. Li.Stk. | 79½ | 68 | 78½ | 7/12 10 |
| | Peruvian Corporation ... | 1,059 | Sept., 1945 | 139,630 | + 9,703 | 13 | 422,833 | 375,652 | + 47,181 | Pref. | 9 | 10 | 9½ | Nil |
| | Salvador ... ... ... | 100 | Aug., 1945 | c 94,000 | + c 7,000 | 8 | c 189,000 | c 175,000 | + c 14,000 | — | — | — | — | — |
| | San Paulo ... ... ... | 153½ | — | — | — | — | — | — | — | Ord. Stk. | 57½ | 46 | 54 | £5 11/1 |
| | Taltal ... ... ... ... | 156 | Sept., 1945 | 2,465 | — 240 | 13 | 6,665 | 8,240 | — 1,575 | Ord. Sh. | 21/3 | 13/9 | 16/3 | Nil |
| | United of Havana ... ... | 1,301 | 20.10.45 | 47,590 | + 20,726 | 16 | 693,724 | 763,586 | — 69,862 | Ord. Stk. | 4 | 2½ | 1½ | Nil |
| | Uruguay Northern ... ... | 73 | Sept., 1945 | 1,634 | + 325 | 13 | 5,031 | 4,199 | + 832 | — | — | — | — | — |
| Canada | Canadian National ... ... | 23,569 | Sept., 1945 | 7,087,600 | — 470,000 | 39 | 65,464,000 | 65,629,600 | — 165,600 | — | — | — | — | — |
| | Canadian Pacific ... ... | 17,030 | 21.10.45 | 1,288,800 | + 68,600 | 42 | 51,057,800 | 51,237,600 | — 179,800 | Ord. Stk. | 17¾ | 13 13/16 | 19 | 2½ |
| Various | Barsi Light† ... ... ... | 202 | Aug., 1945 | 20,257 | + 1,312 | 21 | 127,387 | 119,310 | + 8,077 | Ord. Stk. | 129½ | 97½ | 126½ | £3 11/2 |
| | Beira ... ... ... ... | 204 | Aug., 1945 | 76,111 | — 9,694 | 48 | 846,863 | 899,876 | — 53,013 | — | — | — | — | — |
| | Egyptian Delta ... ... | 607 | 20.9.45 | 3,637 | — 287 | 25 | 274,247 | 309,453 | — 35,206 | Prf. Sh. | 7 1/16 | 5¼ | 6¼ | Nil |
| | Manila ... ... ... | — | — | — | — | — | — | — | — | B. Deb. | 63½ | 58 | 68 | Nil |
| | Midland of W. Australia ... | 277 | Aug., 1945 | 15,703 | — 5,172 | 8 | 29,469 | 40,053 | — 10,584 | Inc. Deb. | 101½ | 99¼ | 95½ | £4 3/9 |
| | Nigeria ... ... ... | 1,900 | 23.6.45 | 50,627 | — 14,001 | 12 | 835,979 | 777,161 | + 58,818 | — | — | — | — | — |
| | Rhodesia ... ... ... | 2,445 | Aug., 1945 | 506,011 | — 45,150 | 48 | 5,552,569 | 5,922,969 | — 370,400 | — | — | — | — | — |
| | South African ... ... | 13,301 | 15.9.45 | 1,028,460 | + 148,112 | 24 | 23,737,132 | 20,756,674 | + 2,980,458 | — | — | — | — | — |
| | Victoria ... ... ... | 4,774 | April, 1945 | 1,285,324 | + 96,325 | — | — | — | — | — | — | — | — | — |

**Note.** Yields are based on the approximate current price and are within a fraction of 1/8. Argentine traffics are given in sterling calculated @ 16 pesos to the £

† Receipts are calculated @ 1s. 6d. to the rupee.